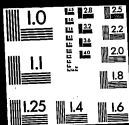


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CENTIMETERS



14:1

Thomas A Edison Papers

A SELECTIVE MICROFILM EDITION PART V (1911-1919)

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Thomas A. Edison Papers
at
Rutgers, The State University of New Jersey
endorsed by
National Historical Publications and Records Commission
18 June 1981

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The original documents in this edition are from the archives at the Edison National Historic Site at West Orange, New Jersey.

ISBN 978-0-88692-887-2

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We thankfully acknowledge the vision and support of Rutgers University and the Thomas A. Edison Papers Board of Sponsors.

This edition was made possible by grant funds provided from the New Jersey Historical Commission, National Historical Publications and Records Commission, and The National Endowment for the Humanities. Major underwriting has been provided by the Barkley Fund, through the National Trust for the Humanities, and by The Charles Edison Foundation.

We are grateful for the generous support of the IEEE Foundation, the Hyde & Watson Foundation, the Martinson Family Foundation, and the GE Foundation. We acknowledge gifts from many other individuals, as well as an anonymous donor; the Association of Edison Illuminating Companies; and the Edison Electric Institute. For the assistance of all these organizations and individuals, as well as for the indispensable aid of archivists, librarians, scholars, and collectors, the editors are most grateful.

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A Note on the Sources
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filmed are the best copies
available. Every technical
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Edison General File Series

The Edison General File (EGF), formerly called the Document File, is primarily a collection of incoming letters addressed to Edison. The letters frequently contain notations by Edison or his secretaries indicating the nature of the reply. Drafts and copies of outgoing letters can also be found in this file, along with numerous interoffice communications and a variety of other documents, such as memoranda, reports, and agreements. The subjects covered include the complete range of Edison's businesses and technologies as well as his personal affairs, reminiscences, and opinions on contemporary issues.

Edison's correspondence files were maintained by his personal assistant, William H. Meadowcroft, who screened the incoming mail, decided which items merited Edison's attention, and directed the remainder for routine or form replies. Most of the outgoing correspondence bearing Edison's signature was drafted by Meadowcroft on the basis of the inventor's marginal comments on the original letter. Numerous additional letters were signed by Meadowcroft himself in his capacity as "Assistant to Mr. Edison." More routine letters that were merely signed "Edison Laboratory" may have been composed by Meadowcroft's own assistants, including Rudolph L. Tulloch and Henry A. Altengarten. Until 1916, tissue copies of the outgoing letters were bound together in volumes (see the Letterbook Series). However, this practice diminished in 1917 and was apparently abandoned altogether by 1919, as carbon copies of the outgoing replies were increasingly filed with the incoming letters in the EGF.

Although Edison remained at the head of his many businesses, a number of which were brought together under the name of Thomas A. Edison, Inc. (TAE Inc.) in 1911, oversight of daily operations was delegated to divisional managers. The business correspondence found in the EGF most typically includes internal strategic discussions with senior officials, items sent to Edison for approval, and cases in which he was asked to intervene personally to make special arrangements for a friend, relative, or associate. The Edison company officials represented in the correspondence over the years 1911-1919 include attorney Frank L. Dyer, who served as president of TAE Inc. until 1912; Carl H. Wilson, vice president and general manager; financial executive Stephen B. Mambert; Delos Holden and Henry Lanahan of the Legal Dept.; Harry F. Miller and Richard W. Kellow, who handled Edison's personal business interests; Robert A. Bachman of the Edison Storage Battery Co.; Walter S. Mallory of the Edison Portland Cement Co.;

William Maxwell of the Phonograph Division; Miller Reese Hutchison, Edison's chief engineer and personal representative for most of this period; and Charles Edison, who was groomed to take over from his father toward the end of the decade.

In addition to Edison's personal and business correspondence, the EGF contains a voluminous quantity of unsolicited mail that the inventor received from members of the public on topics such as politics, war, the economy, cigarettes, diet, and religion and spiritualism. Other unsolicited letters consist of requests for advice (and often financial assistance), invitations to join clubs and societies or to give lectures, offers to purchase real estate, and inquiries from those seeking employment. Such items have been selected only where Edison was personally involved in the correspondence. Meadowcroft made extensive use of form letters in responding to these inquiries and requests, and a representative sample of these form-letter replies has been selected.

The documents in the EGF are arranged by year and are subdivided within each year according to broad subject categories. Many of the subjects relate to Edison's technologies and their associated businesses, such as cement, motion pictures, storage batteries, and phonograph. Major themes in the years up to 1915 include corporate reorganization, the introduction of the disc phonograph, and early demonstrations of the kinetophone, or talking motion picture. After the outbreak of World War I, Edison's attention shifted sharply, and there are large quantities of documents pertaining to his rapid production of coal-derived organic chemicals for military and industrial purposes, his role as president of the Naval Consulting Board, and his experiments on submarine detection and other war-related problems for the U.S. Navy.

Other folders contain documents relating to Edison's ongoing interests, from book and journal orders to mining and minerals. There are also folders with correspondence on legal, financial, and patent matters. Documents pertaining to Edison personally, including his homes, friends, and relatives, can be found in "Edison, T. A.," "Family," "Fort Myers," "Glenmont," "Personal," and "Visitors," as well as in more specific folders such as "Ford, Henry" and "Camping Trip."

Approximately 20 percent of the documents, including all items bearing substantive notations by Edison, have been selected. More specific selection statements can be found in the editorial descriptions preceding each folder.

A Note on the Organization of the EGF and Related Record Groups

The EGF (1911-1931) is a direct continuation of the Document File that covered the years through 1910. Like the Document File, the EGF is derived from the correspondence records as they were originally maintained by Edison's secretaries. However, there are significant differences in the nomenclature and contents of the folders in the two record groups.

The Document File, selections from which appear in Parts I-IV (1850-1910) of *Thomas A. Edison Papers: A Selective Microfilm Edition*, was processed by the editors of the Edison Papers according to a set of guidelines for consistent subject classification. Unsolicited correspondence and other unsolicited items outside the mainstream of Edison's business and inventive activities were arranged in a series of "unsolicited" folders. The EGF, by contrast, was processed by archivists at the Edison National Historic Site beginning in the 1990s, who followed much more closely the occasionally idiosyncratic subject classification that existed in the records as arranged by previous archivists. As a result, the names and contents of the folders are not entirely consistent from one year to the next, and some folders that contain a low proportion of selected documents in one year may have a substantially greater proportion in other years.

Furthermore, correspondence on a particular topic may sometimes be spread out over more than one folder in a particular year or arranged in different folders from one year to the next. An example of the latter is the correspondence from 1911-1913 about a law suit arising from Edison's work on automatic telegraphy during the 1870s. The letters for 1911 and 1913 are filed in the "Legal—Litigation" folder, while those for 1912 can be found in "Telegraph." Similarly, letters to, from, and about Edison's friend Henry Ford can be found not only in the folder called "Ford, Henry" but also in the "Personal" folder and, quite frequently, in several other folders as well. Documents about the annual camping trips in which Edison, Ford, industrialist Harvey Firestone, and naturalist John Burroughs participated during the middle and late 1910s can be found in a folder called "Camping Trip" for 1918, whereas similar items for other years are filed in the "Ford" and "Personal" folders. General folders such as "Edison, T. A.," "Personal," and "West Orange Laboratory" contain a variety of miscellaneous documents which can vary considerably from year to year.

Prior to the 1980s considerable quantities of business records, which were not directly related to Edison nor part of the original files maintained by his secretaries, were processed into the EGF. Many of these extraneous items were removed by archivists during the 1980s and 1990s and reorganized into new record groups such as the Edison Portland Cement Company Records, Edison Storage Battery Company Records, and the records of various divisions of TAE Inc. New record groups were also created for the personal papers of company executives such as Frank L. Dyer and Carl H. Wilson, for Edison's second wife Mina Miller Edison (Edison Family Papers), and for the documents relating to Edison's wartime research and his role as chairman of the Naval Consulting Board.

It should be noted, however, that, along with the routine business documents, there are numerous items authored by Edison or bearing his marginalia in most of the company and divisional record groups, as well as in the Naval Consulting Board Records (Special Collections Series), Harry F. Miller File (Legal Series), and Richard W. Kellow File (Legal Series). Finding aids for these record groups are available from the Edison National Historic Site.

With a few exceptions, the nomenclature used in the EGF archival record group has been retained for the Edison General File Series of the microfilm edition. However, "Edison Portland Cement Company," which appears as a subdivision of "Cement" in the early years of the archival record group and as a main entry in subsequent years, consistently appears in the microfilm edition as a main entry. Three closely related folders—"Mining," "Metals and Minerals," and "Ore Milling"—that are separated by the "Motion Pictures" folder in the archival record group have been brought together in the microfilm edition as "Mining—General," "Mining—Metals and Other Minerals," and "Mining—Ore Milling." In addition, subdivisions have been created for the 1911 and 1912 "West Orange Laboratory" folders, which are much larger and more variegated than for subsequent years. For example, the letters and reports that were written to keep Edison informed about laboratory and company operations while he was vacationing in Florida in March-April 1912 appear in the microfilm edition in a separate folder entitled "West Orange Laboratory and Associated Companies—Letters and Reports to Edison."

EDISON GENERAL FILE SERIES

1911

**Edison General File Series
1911**

E-11-01 Advertising [not selected]
E-11-02 Advice
E-11-03 Articles
E-11-04 Autograph and Photograph Requests
E-11-05 Automobile
E-11-06 Aviation
E-11-07 Banking
E-11-08 Battery, Storage - General
E-11-09 Battery, Storage - Country House Lighting - General
E-11-10 Battery, Storage - Country House Lighting - Windmill

E-11-11 Battery, Storage - Delivery Wagons - General
E-11-12 Battery, Storage - Delivery Wagons - Endurance Tests
E-11-13 Battery, Storage - Delivery Wagons - Horse-Drawn Wagon
Costs
E-11-14 Battery, Storage - Delivery Wagons - Lansden Company
E-11-15 Battery, Storage - Edison Storage Battery Company
E-11-16 Battery, Storage - Electric Vehicles - General
E-11-17 Battery, Storage - Electric Vehicles - Anderson Electric Car
Company
E-11-18 Battery, Storage - Electric Vehicles - Promotional
E-11-19 Battery, Storage - Federal Storage Battery Car Company
E-11-20 Battery, Storage - Foreign - General

E-11-21 Battery, Storage - Foreign - Bergmann, Sigmund
E-11-22 Battery, Storage - Railroad
E-11-23 Battery, Storage - Submarine
E-11-24 Birthday Greetings [not selected]
E-11-25 Book and Journal Orders
E-11-26 Business Propositions [not selected]
E-11-27 Cement
E-11-28 Cement House
E-11-29 Charities and Loans
E-11-30 Chemicals

E-11-31 Christmas and New Year Greetings [not selected]
E-11-32 Cigarettes
E-11-33 Clubs and Societies
E-11-34 Copyright [not selected]
E-11-35 Deafness
E-11-36 Edison, T. A.
E-11-37 Edison Crushing Roll Company [not selected]
E-11-38 Edison Star [not selected]
E-11-39 Education
E-11-40 Electric Light

E-11-41 Employment
E-11-42 Equipment and Supplies [not selected]
E-11-43 European Tour
E-11-44 Exhibitions
E-11-45 Family
E-11-46 Fan Mail [not selected]
E-11-47 Financial [not selected]
E-11-48 Ford, Henry
E-11-49 Foreign Language Correspondence (Untranslated) [not selected]
E-11-50 Fort Myers

E-11-51 Glenmont
E-11-52 Health and Diet
E-11-53 Honors and Awards
E-11-54 Insurance
E-11-55 Invitations
E-11-56 Lectures [not selected]
E-11-57 Legal - General
E-11-58 Legal - Litigation - *George Harrington, Josiah C. Reiff, and Thomas A. Edison v. Atlantic and Pacific Telegraph Co. et al.*
E-11-59 Legal - Litigation - *Thomas A. Edison v. Allis-Chalmers Co. et al.*
E-11-60 Mining - General

E-11-61 Mining - Metals and Other Minerals [not selected]
E-11-62 Mining - Ore Milling
E-11-63 Motion Pictures
E-11-64 Name Use [not selected]
E-11-65 Patents [not selected]
E-11-66 Personal - General
E-11-67 Personal - Johnson, Edward H.
E-11-68 Phonograph - General
E-11-69 Phonograph - Edison Phonograph Works
E-11-70 Phonograph - Foreign

E-11-71 Phonograph - Laboratory and Technical Employees
E-11-72 Phonograph - National Phonograph Company and Thomas A.
Edison, Inc.
E-11-73 Politics
E-11-74 Polyform [not selected]
E-11-75 Port Huron [not selected]
E-11-76 Radio [not selected]
E-11-77 Real Estate
E-11-78 Receipts [not selected]
E-11-79 Religion and Spiritualism
E-11-80 Secretary [not selected]

E-11-81 Stock and Bond Offerings [not selected]
E-11-82 Telegraph
E-11-83 Telephone
E-11-84 Thomas A. Edison, Inc.
E-11-85 Visitors
E-11-86 Warren County Warehouse Company [not selected]
E-11-87 West Orange Laboratory
E-11-88 West Orange Laboratory and Associated Companies - Letters
and Reports to Edison
E-11-89 West Orange Laboratory and Associated Companies - Notes by
Edison

**Edison General File Series
1911. Advertising [not selected] (E-11-01)**

This folder contains solicitation letters from advertising managers.

**Edison General File Series
1911. Advice (E-11-02)**

This folder contains unsolicited correspondence requesting Edison's advice on technical matters or seeking his assistance in improving or promoting inventions. A letter of introduction written by financier George W. Perkins is included.

A sample of less than 2 percent of the documents has been selected. The selected items contain Edison's replies in the form of marginalia.

Thomas A. Edison
Your scheme is practical - can't say
yet - but I am overworked
Or any ~~conclude~~ do anything
with it
Franklin
1888

Dear Mr Edison:

A recent cold snap flashed
an idea into my head and I
want to tell you of it - and to
ask if it could be made of any
practical use - In a word it
is to supply any desired
temperature from 60 to 90°
to the human body - by means
of specially constructed electric
apparatus - to be turned on or
off at will - regardless of
all weather conditions - so
that the "Bird-man" 10,000 ft
in the air - or any invalid
can supply any desired warmth
(over)

2
he-w-ake-may desire at well-
in want. an electrically afforded
individual would be prepared
for any sudden drop in
the temperature. and those
afflicted with tuberculosis could
live out doors comfortably with-
out burdening themselves with
3/4 in. heavily impregnated clothing.

Is the idea worth any thing?
For or to? - Has it ever been
carried out. outside of all the
Jamaican hot bags gals?
Please tell me -

Very truly yours -
J. M. W. L. G. Wills -
605 Highland Place -
Coffeyville.
Kansas -

1/10-1911.

Idea & Request

Grand Rapids Mich; Jan'y 18th 1911.

Mr. Thos A, Edison,

Orange,

The only device that I have seen demonstrated is by a party who sprays cement on walls like paint is

Ans 4/7/11

My dear Sir:-

I feel that I am taking a great liberty in addressing you, and can hardly tell why I am doing so.

I invented and secured letters patent on the pneumatic process for conveying; mixing and moulding concrete and other plastic material.

You can come to New York and see the process. I have learned that other parties in New York are demonstrating this process and claiming they have been allowed certain claims; I have delayed the issuing of the patents pending application for foreign patents.

I have therefore not been able to secure a copy of their claims. I have no doubt you have heard of this process and must realize the magnitude of its scope.

I am not the typical poor inventor and still I am young and new at the patent game. I know on the contrary, that you have had experience and to tell you the truth; That you are not so in need of money that the advice you would give me would be all for your own interest.

This Idea may not be as valuable as I think it to be. I am coming to New York ; and if you are to be at home next week and it would not be too much to ask of you; I would gladly go to your city from there; And would esteem it a great favor if you give me a few minutes of your time for a conversation on the subject.

If I am asking too much; you have simply to ignore this letter. I wish to leave here Sunday night; which will get me to Washington Monday morning.

I will procure from our Congressman Wm. Alden Smith; a letter of recommendation; and proceed either from there to Orange or New York. Should you entertain my suggestion favorably; will you wire me here at my expense, the date most convenient for you to see me.

2. 1/18 11.

Very respectfully yours

John C. Denton
334 Scribner St.

Grand Rapids, Michigan.

JOHN D. OREAR
ATTORNEY AT LAW
MEXICO, MO.

MEXICO, MO. Jan. 14th. 1911

*Power now can
be transmitted
150 to 200 miles in any quantity
for only a question
of money*

*EE 1911
Ga. 1/19/11*

Hon. Thos. A. Edison,
Llewellyn Park.

Sir:-

I am informed when the effort is made to transmit electric power from water-falls it is found that when the current is stepped up to a certain voltage, the air refuses to become longer an insulator, and the electricity escapes in the air. I believe you are the only man in the world who can discover an insulator which will prevent the loss of the current. It may be 100 years before another with your knowledge is born into this world. We have enough power going to waste to run every train, cook every meal, and run every factory if only a way is found to transport the current without much loss for any distance. An estimate is made that 9,000,000 of horse power is going to waste in our Western Mountains alone. I believe if you will you can stop this waste, and thereby confer upon mankind its greatest benefit. Hoping that I may be pardoned the boldness of addressing you thus unsolicited, may I ask to remain,

Yours Very Respectfully,

John D. Orear

Ans 1/21/11

CORRESPONDENCE BUREAU
YOUNG MEN'S CHRISTIAN ASSOCIATION
CENTRAL DEPARTMENT
CLEVELAND

11/7-11

Dear Thos A Edison

Very Amused
I understand with
the effects of blue
light on the body

Would you kindly
advise me what's the best
of electricity to use in stimulating
the body cells - and which can be
"stored up" in the body -

I sometimes take direct current dynamic
electricity off the telegraph instru-
ment by placing one hand on
"key" & other hand on steam
radiator to form a circuit
but this kind of current seems
to "jerk."

I keep my feet insulated by
wearing rubber soles and
think there ought to be
some way so "store up" electricity
in the human system to overcome
fatigue nervousness or is there
not?

CORRESPONDENCE ROOM
YOUNG MEN'S CHRISTIAN ASSOCIATION
CENTRAL DEPARTMENT
CLEVELAND

2
Mr. Outcault the "Buster
Brown" Cartoonist tells
me he can light the gas
with his finger tip.
How can I acquire this
power? Is it a matter of
storing electricity? It's hard
to believe that one can do
this. But I'm surely
ambitious to do it.

~~How~~ How is your ear trouble
now? I still have the
terrible head-aches and
the left ear is so bad
lately that I have to
press the head against the
sounder or resonator in
order to "read" the messages.
Thanking you kindly with 73"
Sincerely Geo. Deming

Ans
Jan 23rd 1911

853. North 73rd Ave

Wm. Thos. A. Edison

Dear Sir:

Say to out of my line

but the man who gets a
good patent on a highly
concrete

Jan 15th 1911

made a
lot of money

I was an Operator for
17 years on the C & N Ry.

My attention was drawn to the
fact that Wood was getting short for
Railway Ties. I have patented in the
U. S., Canada, England, France and Russia
a "Parallel Reinforced Concrete Cushion
Rail Tie or sleeper - which runs Para-
-llel with the Rails for a cushion. I
use Asphalt making a continuous
cushion bearing. May I send you a
model, and copy of Patent for your
inspection, and opinion, will give
you an interest in same, for assist-
ance to get introduced.

Very Respectfully yours
J. S. Miller

SB. - 1 to 100 + Reg. vst 5

URLAINIS BROS

Established 1894.

Wholesale & Retail dealers
in Drugs & Chemicals
Electroplating Establishment
Import & Export.

RUSSIA

Postcard on Don January 23/5 1911

Send Catalogue of
Storage Batteries
that is appropriate that there is
no number of Batteries in
Dear Sir: Received
Thomas Edison Esq.

Before commencing this letter I beg your forgiveness for taking away few minutes of your valuable time.

Every great invention is the more valuable the more it comes in contact or in use in the life of the great masses.

Genius belongs to the whole world, and therefore I, who is separated from you by a distance of about 10000 miles in the far away and endless Russia, hope you will not refuse to accept my services in the introduction of your inventions in Russia. At the present time I am greatly interested 1) in the building of houses according of your ideas which have attracted the attention of the whole world 2) in your great storage batteries.

Living in a rayon of unlimited natural mineral resources coal mines etc. on the great Don river bassayn at the gate of Caucasus in the city of Rostov on Don which in Russia is considered the second Chicago.

I hope that the geographical position of the city on one
one hand as well as mine and my brothers energy
and ability on the other, our good name and
working qualifications, would make it possible
for us to introduce here your great inventions
which transfer fantasy into reality.

Hoping you will favor me with an answer
I remain yours very respectfully
J. Urdainis

Our references are: The whole city and the following
Banks:

The Imperial Bank.
Asow Don Commercial Bank.
Wolysko Camskiy Comm. Bank.
S-Petersburg private Comm Bank
Moscow Merchants Bank
The Asiatic Bank
The Mutual credit Banks
The S-Petersburg International Bank
and many others.

ODOROMETER

RUDOLPH HERING
M. AM. SOC. E. E.
W. ASST. C. E.
GEORGE W. FULLER
M. AM. SOC. E. E.
ELMER G. MANAHAN
M. AM. SOC. E. E.

HERING & FULLER
CONSULTING HYDRAULIC ENGINEERS
AND SANITARY EXPERTS

170 BROADWAY
NEW YORK, N. Y.

WATER SUPPLY
WATER PURIFICATION
SEWERAGE
SEWAGE DISPOSAL
REFUSE DISPOSAL

TELEPHONE 4880 CANTONET
CABLE ADDRESS, HYDOR, N. Y.

SUBJECT

January 23, 1911.

Thomas A. Edison, Esq.,
Llewellyn Park,
Orange, N. J.

My dear Sir:

I have been interested for some time in the question of the dissemination of odors, particularly from sewage disposal plants, and some time ago, as my memory serves me, I got the impression that you had studied this question on general lines and designed some sort of apparatus of an electrical nature for recording the intensity of odors, etc. I should be very grateful if you would be good enough to indicate to me where I could learn as to the results of your studies of this general question.

Very respectfully,

Wm W Fuller

*Read copy
JAN 24 1911
The machine made was
only for scientific purposes
it would not answer
for bacterial odors*

Over

But I think you could force air through
an oxidizing apparatus & continuously
indicate the amount of organic
matter in the atmosphere —
either oxidizing or using it to reduce
an oxide. — Σ

THE HOME PAPER THAT CONTAINS
ALL THE NEWS OF THE MONTCLAIR

THE GREAT ADVERTISING MEDIUM
OF THE MONTCLAIR AND VICINITY

—THE—
MONTCLAIR HERALD

PUBLISHED EVERY FRIDAY AFTERNOON

DISTRIBUTED AMONG A POPULATION OF 2500 IN MONTCLAIR, UPPER
MONTCLAIR, MONTCLAIR HEIGHTS, GLEN HIDE AND VERONA

HIGH WATER MARK

CIRCULATION 3,000

TELEPHONE 477

FRANCIS LEON CHRISMAN, PROPRIETOR

*Ans
1/26/1911*

*If the paper is just the slightest
damp it will not Elongate
in winter. The weather is dry*

Dear Mr. Elison:

We are having an amount of trouble in printing our paper with electricity, and I write to ask if you cannot kindly suggest some way by which we can prevent the difficulty.

In printing our paper frictional electricity is developed somehow, so that the sheets become highly charged, and will not run through the folder. They stick together as if they were glued, and you get quite a little shock when you attempt to handle them.

Can you kindly suggest some way by which we can draw off the electricity, so that we can run the sheets through the folder at once. As things are now, they come off the big press surcharged with frictional electricity, and stick together like glue, so that we cannot get them through the folder. The result is that we miss the mails, and destroy any amount of paper.

You will remember that I have written frequently about your inventions in the papers of the United States, and I would appreciate a hint from you as to how to avoid the electricity.

I should also be glad if you could give me about ten minutes of your time one of these days. I want to ask you about one or two things, if convenient to you.

With kind regards, I am

Very truly yours,

F. Chrisman

DeK
ALL COMMUNICATIONS SHOULD BE ADDRESSED TO THE COMPANY
TELEPHONE {882} CORTLANDT

The Moore Filter Company

Broadway-Malden Lane Building
170 Broadway

HENRY B. HAIGH
PRESIDENT
WILLIAM H. HARDING, JR.
SECRETARY AND TREASURER
JOHN COLLING CLANCY
CHEMICAL ENGINEER

CABLE ADDRESS
MOOREFILTER, NEW YORK
(MOFANDHPHLLGDS)

NEW YORK, U. S. A. January 28, 1911.

Mr. Thomas A. Edison,
Orange, N. J.

Dear Sir:-

Your valued favor of the 25th inst. received during the absence of the writer, which will account for the delay in acknowledging its receipt.

We should be very pleased indeed to avail ourselves of your suggestion to have Mr. Clancy go over to your Laboratory and explain his process more fully to you just as soon as he returns from the West, which will probably be in the course of the next ten days or fortnight, which we trust will be quite satisfactory to you.

We are sure that Mr. Clancy would wish to personally avail himself of the opportunity of explaining the process, and therefore we make the above suggestion rather than sending someone else to do so.

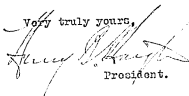
Sincerely thanking you for your interest, and trusting that the arrangement that we have suggested will be quite agreeable

RECEIVED
Moore

Mr. Thomas A. Edison. -2- 1-28-11.

to you, we beg to remain

Very truly yours,

A handwritten signature in cursive script, appearing to read "George Westinghouse".

President.

HHH/H

Say - there is no difficulty in utilizing
the liquites in gas producer & gas engine
transmit the power 25 to 50 miles, it is

Aug 11/11

Billings, Montana have always
the proper way to do it. January 1st 11
Thos. A. Edison ^{has} created it. You better write
Cauden the Govt people counseled
with conservation for information

My dear Sir:

I am Enclosing you a letter

From Westinghouse Electric regarding the
use of the gas producer Engine in utilizing
our liquite Coal.

For Example - We have Billions of Tons
of an Excellent quality of Sub-bituminous
Coal within 25 Miles of Billings.

Do you consider it possible to convert this

(2)

Coal into Heat, light, and power on the
ground at the mines and transmit it
by wires to Billings for Heating purposes.
These Coals Analyse as Follows =

Air-dried Sample.

Moisture.	4.52
Volatile	34.76
Fixed Carbon.	54.71
Ash	<u>6.01</u>

British Thermal Units = 11,610

~~~~~

We have no Railway to this vast body  
of Coal. I know of many other Coal

(3)  
Fields immediately tributary to agricultural  
lands that may be reclaimed with  
Electric pump.

If these coals can be converted into  
heat <sup>at the mine</sup> for power and all domestic  
purposes why would it not be a  
great saving to the people in the  
transportation of the coal over  
Railways. Now that we have a  
Bureau of Mines devoting their

(1)

Energies to the Conservation of Coal and our other  
Natural resources-

Would it pay to put in a power plant at these  
Coal measures for the purpose of furnishing heat  
for domestic purposes- as well as light and power.  
What would be the limit of distance-

I have visited all the Coal Fields of the west  
during the past three years- and have  
resided in the West since 1869- and I feel  
that there are great possibilities for utilizing  
our Coal and Oil without hauling and

(5)

distributing the Rarr articles-

The Coal of the Atlantic States would supply  
their territory with power - light - and heat  
directly from the coal fields -

The Middle West the same - as far as the  
Missouri River -

The vast deposit of Coal and Oil, <sup>west of the Missouri</sup> would  
supply all the territory from the Missouri  
to the Pacific - by river -

Mr. Thompson is a firm believer in the



(5)

Electrification of the Railroads in the near future - particularly West of the Missouri River - your great knowledge along these lines prompts me to ask if it would not be practicable for the City of Billings to undertake the plan of transmitting such Heat - Light - and Power from our near-by Coal. The fuel is so plentiful that it could be mined by Steam Shovels - if necessary. There are Billions of tons within

⑦

Substantiate the  
fact that it had  
lost the pasture and  
of a tremendous amount  
but the people need it  
the starving badly

25 miles of our City - The lignite fields  
practically cover Dakota - and Wyoming -  
Extending North into Canada - and  
South into Mexico -

perhaps you could refer me to the  
Comparative Cost of Electric Heat generated  
by Coal - and the Cost by Water-power.

The gas-producer Engine looks like  
a solution of the question of cheap

power - Thanking you most sincerely - M. L. Hoyt.

2603. Third Ave North.

Billings, Montana.

**HOOD ENGINEERING CO.**  
MECHANICAL AND TOPOGRAPHICAL DRAFTSMEN  
BLUE, WHITE AND BROWN PRINTS  
MACHINE DESIGNING AND DEVISING A SPECIALTY

Dallas, Texas Feb. 14/1911

Mr. Thomas A. Edison,  
West Orange, N.J.

*Read this  
FEB 8 - 1911  
as far as  
practical to send  
about 14 different  
mechanical wires  
will receive to 14  
different times  
more is attempted  
7 months coming*

Dear sir:-

I suppose you are besieged with questions of the character I am going to ask you, but I have no source of information that I consider as dependable as yourself.

I want to know if it be possible to transmit over the same wire as many as one thousand electric currents, or to cause these electric impulses to select its index, so to speak at the other end of the wire?

The strength of the currents may be very small, but capable of being used as directors of stronger currents.

To make myself clearer, when I send the impulse #900 I want it to select #900 at the other end.

If this can be done I can look at you while talking to you over the telephone,

Yours very truly,

*W. L. Hood*

Mr. Thos A. Edison Feb 4<sup>th</sup> 1911

Dear Sir:

Your plan is of course impractical - it could  
be done mechanically but I do not  
think the RR people would carry it -  
it is too great a thing for them

I have just finished reading the very  
interesting article on the proposed letter by  
Allan L. Benson. I wish to present to you an  
idea concerning railroad construction which I  
have had in mind since traveling in the western  
mountains last summer. I know that if I would  
present it to any railroad company direct  
that they would reject it without giving it any  
consideration, but I feel sure that if presented  
by you that it would be considered seriously.

My idea is to use locks similar to the ordinary  
canal lock to reduce the mileage and to greatly  
reduce the grade on any of the railroads now in  
operation in the Rocky Mountains. On some parts  
of the Southern Pacific R. R. in California the road  
winds around a great distance to gain a few  
hundred feet elevation. By wisely locating a lock  
in regard to a plentiful water supply, and the  
topography of the country I feel sure that  
millions could be saved in operating and  
much time saved. My idea would be to elevate  
as much as possible by every lock established  
I believe in some places as much as 1000 feet  
elevation could be accomplished at once.

a boat similar to those used in the Railroad ferries at Detroit and San Francisco would solve that part of the problem, as they are operated very rapidly and take on a whole train at one time. A reservoir could be installed, for storing water, the same size as the lock so as to hasten the filling of the lock. The reservoir could be supplied by streams.

I realize the first cost of such a lock would be great, but feel sure the great saving in time and operating expense would justify the expense.

I wish you would give this some thought and if it is impossible I wish you would so inform me so I will not study over it or try to interest any one else.

Yours truly  
Robert S. Campbell

in the United States & in Canada.

Furthermore, I think that if records of the laying hen's cackle could be got, their use in the poultry yard & houses in winter, would serve to stimulate the egg-laying instinct - through the power of suggestion -

Yours faithfully  
R. M. Brewster

The egg laying idea  
is highly commendable  
and will not be  
put off to try it  
in the future  
The suggestion  
Woodstock - Oregon  
Feb. 6 - 1911

Thomas A. Edison.  
West Orange - N. J.

FEB 13 1911  
Ans  
2/14/1911

Dear Sir:

As a lover of Nature,  
and her birds & their song,  
I have often wished that  
your Phonograph had  
records of the notes & song  
of the nightingale, robin  
redbreast, English thrush  
& blackbird, ~~etc~~ and sky-  
lark, which make the Spring  
& early Summer in England  
so attractive.

If these could be obtained  
I am sure there would be  
a large demand for them

HERBERT F. RAWLL

P. O. BOX 472 HARRISBURG, PA.

HARRISBURG, PA., Feb. 8th, 1911.

*It would  
be very  
difficult to apply  
the idea you speak of  
to a telephone  
h*

FCB 9-1911  
Ans 2/10/11

Mr. Thos. A. Edison,  
Orange, N. J.

Dear Sir:-

You are familiar with the instruments used in some Hotels which throws a red light in your room reading "Mail in office for you". Did the application of a similar instrument to telephones ever occur to you whereby you might return to your apartment and see a red sign over your 'phone "Call 181 John"? In New York City I understand at least one half of the telephones used are often left unattended.

Imagine the convenience of an attachment of this kind which would automatically advise you upon your return that a certain party had called you.

The telephone company I should think, by a series of push buttons at central, could work this out from the exchange, and of course they would charge so much for attaching this instrument, or loan it and charge subscribers so much for each message flashed.

Awaiting your comment, I am,

Yours very truly,

HFR:MEW

*H. F. Rawll m. e. h.*

AWD  
2/14/1911

FREDERICK K. LORD  
NAVAL ARCHITECT  
BALTIMORE, Md.

Edison Laboratory  
Gambler Park, N.Y.

Running wheels success  
Belt of wheels to a  
handy clockwork  
Whose that has  
figured out  
12/11

Dear Sir,

I am designing an apparatus to measure the pull on the tow line of models of large vessels and am looking for a motor power that will wind up the tow line on a drum at a constant rate of speed. I can't use electricity and as I have owned a spherograph for over ten years it occurred to me that a triple spring movement would give just what I want.

I have to wind up a 9 lb weight on a drum of 4 inches radius at the rate of 600 revolutions per hour for 50 turns - that is, six feet to ~~turn~~ <sup>make</sup> 50 turns of the drum in 5 seconds with a shaft torque of 56 lbs. Are the springs strong enough to do this for 50 turns?

The principal thing is to get the turning rate steady during this

FREDERICK K. LORD  
NAVAL ARCHITECT  
BALTIMORE, Md.

105 LOBB AVENUE  
BALTIMORE, Md.

period. Say the turning rate is 600 per minute. Do you think the machine could be made to last for 500 turns without having its rate per minute fall off more than one revolution (1.99)?

Of course I would have to have the gear system built to get the power on the driving shaft.

I would very much appreciate your assistance as I don't know where to get a spring motor if your spherograph ever wants to. Thanking you for any information you care to give me, I am

Very truly yours  
Frederick K. Lord.



Ans. 7/17/14

I think there is no doubt that an  
iron range could be followed by  
blast waves <sup>at intervals even beyond 10 hrs</sup>  
Mr Thomas A. Edison <sup>of Dynamite on hand</sup> would produce a wave of the  
Orange, New Jersey.  
Starbuck: <sup>disturbance of the wave could be</sup>  
measured by simple Seismographs  
For sometime I intended to write to you (but for want of  
your address it has been delayed until now).

The subject I intend to discuss may present a man of science  
somewhat visionary, however the more I think of it the firmer  
I believe my theory may be right and it should be so being  
an admirer of Mr Edison for the many questions he has given  
to the world I would like to see the invention made by him.

A few years ago while out with some country or land lookers  
and camping in the open about four miles west from any town  
mines but on what we supposed at the time to be an iron  
range and has since partly proven to be such. While around  
in the woods we could hear the fluting at the mines sometimes  
it would appear directly under us at times to the south at  
other times to the north of us but at no time as if it was  
at the west end in the evening while sleeping in our tent

On some browse close to the ground the blasting appeared more distinct and as if directly under us at some dept. In speaking of the matter to some old woodsmen who have cruised for years throughout the Iron Country they had come to the same conclusion as we had that the sound appeared to follow the Iron veins or leader in which ever direction they might run from the body of ore on which the blasting was done, as the Iron being heavier more compact a better conductor of sound than the rock or earth, this would seem possible.

If this should be true it would appear to us that some instrument something on the order of a Sismograph needle could be invented and when blasting is being done on a body of ore at a mine if the needle is stationed a distance away from the blasting it might indicate in which direction the ore body or veins did run and the extent of it could be determined at a distance from the mine.

If this were possible it would be a very valuable invention and would save thousands of dollars both to the mine owners and prospectors.

Someday at your leisure I would like to hear from you.  
I am Sir.

Very respectfully yours  
Louis H. Scherwell



Fort Scott, Kan 2/21/1911

FEB 21 1911

vice pres. F. K. BARSON

Dear Sir I am not quite ready to order one of the valuable Phonograph will you kindly favor me in this request direct and mail this letter to Mr. EDISON

Mr. EDISON SIR will you have one of your clerks write if there is a tel. phone supply that will exchange the voice from a receiver and if a home can be secured, so as to be a help in carrying a voice from the Talking Globe through a ball hopeing i am not imposing upon your kindness a glance at the other side of this globe t will explaine my want to you i judge

thanking you in advance for the favor i remain

yours respectfully

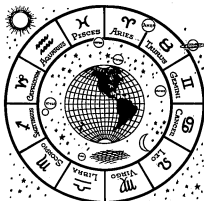
1014, w. 5, st J, W. COFFEY Ft Scott kan

Order No. 1911  
FEB 21 1911

*That Mr. Scott  
is  
C. K. Barson*

[ON BACK OF PREVIOUS DOCUMENT]

DO YOU KNOW?



Gen. J. W. Coffey, once widely known as a Cedar Rapids Townsorial Artist, a feature with the great Burman & Bailey great shows during the tour of the old and new world, lately he has been harnessing up the elements and placing a hidden force in a globe, representing the earth sitting in the center of the universe, claiming that each being being forever an opposing magnet in a list of subjects that cover in the covers and clarity of his own affairs. Profoundly pointed around the ball your subject will be among them. They are classified and numbered, your subject being reduced to a direct question. You find the number to the attending employer, the answer comes from the globe.

COME AND HEAR IT

I offer a premium for a better name, as it is going to be patented. Starting Nov. 28th to Dec. 4th, 1910, at the Auditorium.

J. W. COFFEY



THEODORE C. HAILES, JR., C. E.  
ALBANY, NEW YORK

February 21st 1911.

*Say I want  
Lab every day*

Mr. Thomas A. Edison.  
Orange, New Jersey.

Dear Sir:-

Have received yours of the 20th instant, stating that the device described by me is out of your line and therefore of no interest to you.

FEB 23 1911  
*Ans 2/23/11*

I beg to say that if you will accord me the privilege of a personal visit, I am confident of being able to interest you in the theory on which it is based. A direct and what I believe to be an entirely new application of electricity is employed in the separation of mixed gases, i. e. gases not chemically combined.

I do not desire to be obtrusive in my persistency but I do believe that the possibilities and scientific value of such a device are so great as to warrant a ten minute consideration by you.

I thank you for your attention to my letter of the 17th instant.

Yours very truly,

*Theodore C. Hailes Jr.*  
886 State Street.

TCH/CFW

ALL COMMUNICATIONS SHOULD BE ADDRESSED TO THE COMPANY  
TELEPHONE (8882) (CORTLANDT  
8882)

## The Moore Filter Company

Broadway-Balden Lane Building  
170 Broadway

HENRY B. HAIGH  
PRESIDENT  
WILLIAM H. HARDING, JR.  
SECRETARY AND TREASURER  
JOHN COLLINS CLANCY  
CHEMICAL ENGINEER

CABLE ADDRESS  
MOOREFILTER, NEW YORK  
(READING OFFICE 6082)

NEW YORK, U. S. February 28, 1911.

*Day Comm. over any time*  
WAR 3 - 0  
Ans 3/2/11

Thomas A. Edison, Esq.,  
Orange, N. J.

Dear Sir:-

Supplementing our respects of the 28th ult., we beg to advise that Mr. Clancy has returned from the West, and that he would be pleased if you will suggest a time suiting your convenience for the interview that you suggested in your favor above referred to.

Very truly,

*Henry B. Haigh*  
President

HHH/H

*John J. B. Grant*

MANUFACTURERS OF

Cast Iron Water and Gas Pipe  
Special Castings

WORKS AT OSWEGO, OREGON

Quotation Subject to Change Without Notice. All Contracts and Agreements are contingent upon Strikes, Accidents, and other occurrences beyond our control, any casting developing an inherent defect when placed in service will be replaced. P. O. No. agreed point of delivery. No claims for damage allowed.

W. M. LADD, PRESIDENT

A. B. PATTULLO, SEC. AND GENERAL Supt.

# The Oregon Iron and Steel Co.

339 Sherlock Building

Portland, Oregon, March 2, 1911.

*Ans 3/1/11*

Mr. Thos. A. Edison,  
Orange, N.J.

Dear Sir:

We are prompted to write and ask you if you have ever taken up the proposition of using electricity in the burning of stumps from land on which the timber has been cut off. In the West the clearing of stumps from the land is becoming more and more of a problem because of the high price of labor, and much land is allowed to lie idle which would be put in cultivation were it possible to utilize the large amount of cheap electrical power, which we have in our glacial rivers, for the purpose of clearing off the land.

*I do not think it practicable to use electricity for this purpose*

Yours truly,

The Oregon Iron & Steel Co.,

*W. M. Ladd*  
Secretary.



Dear Sir

Say that I have a little faith that within many months I could be as well as Edison

Seattle Washington  
March 3, 1911

Reedus  
MAR 6 1911

I just found out your address from the Editor of the Seattle Daily Star and thought I would write you about what I have in mind I was thinking of an invention that would be a great help to the world I have studied it and think it would work But I am only 17 years old and need some help I told my father about it and he didn't think it would work. I have thought of a dozen different things

that I think would work if I had  
the education. But the one I have seen  
the most in earnest about is sending  
a wireless message under water. It would  
help me out greatly if you will please  
give me all the advice you can. I would  
be willing to pay you good for the  
advice if it works but otherwise I  
wouldnt afford it being not very well  
fixed. I would have tried to get someone  
in this city but I thought they would  
cheat me out of it. And I think you are  
the greatest inventor in the world. If  
this will work which I am almost positive  
it will help me and the folks very  
much. Well I cant think of any thing else  
to right about so I will close expecting  
a returne letter every day.

I am 17 years of age just got layed off one  
account of a slack in business but expect to go  
to work in a week or so.

I will close hoping you will  
give me what advice of any kind  
you know.

Yours truly  
Clayton Anderson  
114 W. Kilbourne Street  
Seattle Washington

will you please send me a Book  
of Patents wanted. Write soon

Shes & Bperts

ROOM WITH BATH \$2.50

Taylor, Texas, *May 2* 1917

Thomas A Edison Esq  
Orange, N.Y.

*Mr. Edison is the best  
thing I know of  
and your work*

Dear Sir

Will you kindly send me some  
material that is *free* and trans-  
parent. I've some *11000* zinc. I read  
an article of reducing a coin to  
1400 should an invention of yours

and as my brain runs in that frame  
of producing something useful to mankind  
I have been working for sometime and  
exp. to the point I have not *obtain*  
able to obtain what I want

I have tried *Iron Glass* also  
considered, and if I could secure  
something similar to *considered*. I *may*  
be able to complete

Will you kindly reply Yours Truly

*A. H. Parker*

*John B. Fessenden*

Delaware City, Del. 3-28-1911

Thomas A. Edison, Esq.,

Orange, N.J.

Dear Sir:

If gas engine manufacturers could increase the power of their engines 30% to 50% without increasing the weight of their engines more than a few per cent, at an average cost of \$5. per engine--- Don't you think think quite a few of them would be willing (some of them even anxious ) to pay a few cents per horse-power for the privilege of doing so ?

If I can furnish the Know-how-to-increase-the-power-of-gas-engines, are you willing, for a half interest, to write the specifications and claims for patents to cover it ?

I am aware that there are several thousand patent attorneys, and that a large per cent of them might be willing to admit that they had forgotten more about patents than you will ever know, but I am willing to take chances on you.

Thanking you for an early reply, I am,

Yours truly,

*GW Kennedy*



*Say that the invention is out of my line -*  
MAR 27  
Am 3/29/11

I also to August

Aug 15/11

Very truly I am an overworked  
that I cannot spare time to  
study out the details of your  
an opinion - which I refer to ready  
Milstone March 28th 1911

Thomas A. Edison Esq.

Dear Sir, I refer to a square  
your patent proposition here

which I have been regarding for a  
long while, and the more I think about  
it the more I am convinced that the  
proposition is workable, but owing  
to the heavy cost of construction  
and the present surroundings here  
I am unable to put it into practice,  
I could not comply with the patent  
requirements if I had the patents,  
owing to the cost, but I believe  
that if the idea was handled that  
there is a lot of money into it,  
As I am situated I cannot handle it,  
I am like the man who invented the  
air brake, I need assistance,

I write to you to ask will you  
examine into it and advise me,  
I am writing to you personally,  
because I know from your reputation  
I can trust you, I am not willing to  
trust private Secretaries, that I have

Orange, New Jersey  
Edison



Thomas A. Edison Esq.

~~Edison~~  
W. B. A.

(strictly  
Personal)

2

never heard about, not that I would cast reflections against anyone, but it is just caution, will you look into what I have and give me your opinion, I will trust you with a full and complete specification, and when you see it if you think there is anything in it, and will handle it I will let you pay yourself out of it,

I am convinced that there is a whole lot in it, or else ~~(Nothing)~~ ~~however~~ it is worth trying, will you return me your private address, where you alone will see my specifications and I will entrust you with the whole thing.

Hoping to hear from you by return mail. I am

Your obed. Servant  
Geo. G. Kerr

Milestone P.O.  
Saskatchewan  
Canada

John J. Higgins

This idea has been  
suggested by several persons  
and is very good one  
Mar 29<sup>th</sup> 1911  
Mr. Thomas Edison

1911

Aug 11/11

Dear Sir

Mr Edison I wish to ask you  
a question in regard to the  
Safety of lives in High factories  
Where the fire Escapes are very  
Well installed now I ask you  
opinion as to this idea how would  
it Be to have a chute from one  
Building to another one or more  
according to the height of the Building  
in time of fire on the upper stories  
the people can slide from one  
Building to another please let me  
know what you think of this idea

it is simply to slide out of  
Where the pin is into another  
Building these studs can be  
applied from one Building to another  
Please let me know if you  
will be so kind. What you think  
address to

Thomas B. Lary

#4 Wehr St.

Bristol R.I.



Idea & Request

W. H. HAZLETT, President

DR. H. C. WHITE, Vice-President & Mgr  
OFFICE AND MILLS, ARIEL, FLORIDA

A. H. HAZLETT, Treasurer

# ARIEL LUMBER COMPANY

MANUFACTURERS OF

CYPRESS SHINGLES, LATH, ETC.

PINE, CYPRESS AND HARDWOOD LUMBER

Am 4/5/11

ARIEL, FLORIDA, Nov. 30<sup>th</sup> 1911

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir,

~~Your idea is OK, but I don't~~  
~~see possible~~ <sup>It is possible</sup> ~~there could be~~  
~~worked up a considerable trade~~  
~~but being an outside~~  
~~ally, naturally we could~~  
~~not attempt to do it~~  
~~unless we~~

It looks like presumption on my part to offer suggestions to  
 an inventor like you, but I have an idea that I have tried in a way  
 that I thought you could work out an advantage. I will give  
 it to you and if you think it worth working out, if it has not already been  
 tried and you can pay me whatever you think the idea is worth.

The idea is this, to make a clock-work attachment to your Phonograph to  
 set as an alarm to start the machine at any given time, with records to  
 suit, and use it for an alarm to call any one up at any time same as an  
 alarm clock. It could also be made to stop it at the end of the record.  
 I have used an ordinary alarm clock to start my phonograph, by removing  
 the bell and using a string to the starting <sup>lever</sup> of the machine, and it never  
 fails to wake me. Please let me hear from you in regard to it.

Yours very truly,

W. A. Clark

CENTRAL HOTEL

A. P. ZIMMER, PROPRIETOR

The investment would be  
rather large to get enough  
heat to keep the frost  
down ~~of~~ <sup>from</sup> my impression

Ans 4/12/11

NORTH WILKESBORO, N. C.

3/3 APR 3- 1911

1912

OOE

Mr. Thomas A. Edison,

Orange, N. J.

My dear Sir:-

It seems quite the order of the day to sound Mr. Edison on nearly every phase of life but I want to suggest a field, which if it can be made practical, will be a boon to horticulturists.

It is my intention to form a company for engaging in commercial apple growing in the mountains of this state, possibly within a few miles of this point.

The heating of orchards by the means now in use is a

CENTRAL HOTEL

A. P. ZIMMER, PROPRIETOR

NORTH WILKESBORO, N. C.

191

very laborious undertaking and it occurred to me that in as much as the numerous streams in these mountains can for so small an outlay be harnessed, that possibly you might devise some means where by the valleys, where frost settles, could be planted in orchard and the heating done by means of the power which would cost practically nothing.

In order to plant an orchard of 300 acres it is necessary to buy many times that number of acres in order to escape the valleys where there is no current of air to keep the frost

That the most practical way is, posts between the rows containing *Crodo petraea* providing the trees are prevented from receiving the full force of the wind by protecting hedges on west work. It requires a surprisingly small amount of heat if the wind is stagnant.

Ed

Trullsey

CENTRAL HOTEL

A. P. JONES, Proprietor

NORTH WILKESBORO, N. C. \_\_\_\_\_ 191\_\_

from settling.

You will confer a great favor on me by letting me know whether this idea of mine is feasible, and my purchase of land will be guided very materially by your opinion.

Please pardon my intrusion upon your time but I am also one of the many who is seeking your advice.

Very truly yours,

J. C. Tibbets,  
Lexington,

N. C.

1  
Mr 4/8/11

**PROBATE JUDGE'S OFFICE,  
CUYAHOGA COUNTY**

ALEXANDER HADDEN,  
PROBATE JUDGE.  
H. A. SCHWAB,  
CHIEF CLERK.

CLEVELAND, O. April 14th 1911

Thomas A. Edison  
Dear Sir:

One  
Possibly some of the methods you  
suggest would produce ~~the~~ results  
but it is costly experimenting & none

The Sunday leader of Cleveland devoted an entire  
page two weeks ago to the application of the aeroplane for  
the production of rain probably ~~by~~ ~~it~~ = ~~the~~ ~~the~~

It is somewhat out of my line that  
it seems the government has spent ~~two~~ ~~or~~ ~~more~~ ~~years~~ ago on the  
advant of its aeroplane. I recently accept give an opinion  
years ago on the coexisting theory. With the

possibility of going up  
two miles in any direction - above of through moisture  
laden clouds, there comes the suggestion of removing  
certain experiments or rather trying them out.

Some of Cleveland's best physicists & scientists are interested  
in my theories and the possible benefit to growing  
crops. Of course they would not apply where there was  
no moisture or cloud formation.

First. Let us suppose that rains usually followed  
great battles or Fourth of July <sup>celebrations</sup> ~~explosions~~ etc. Was  
it not the little powder particles which were  
added to the particles in the upper regions  
which caused the rain. The particles formed  
nuclei around which the moisture gathered and  
with the lowering of temperature at sunset

**PROBATE JUDGE'S OFFICE,  
CUYAHOGA COUNTY**

ALEXANDER HADEN,  
PROBATE JUDGE.

H. A. SCHWAB,  
CHIEF CLERK.

**CLEVELAND, O.**

you get rain. This theory might be taken in view of the fact that Atkin a Scotch savant has shown that you obtain no rain, mist, or fog, without a dust particle serving as a nucleus. A dirigible could carry & scatter dust particles & get in on all four with the phenomenon following a battle with lowering of temperature <sup>at</sup> <sub>sun</sub> down.

They tell me that there are often lakes, which, when it is quiet, go below the freezing point without freezing, and that an animal splashing into the margin of one would start the molecular readjustment & the disturbance would start the freezing process over the entire pond. A cloud might be like the pond & an explosion or lowering of temperature brought about by a cold wave or explosion would start a rain.

Now a cold draught or lowering of temperature could be produced in a part of a cloud by trailing a tank of carbonic dioxide after an aeroplane as it shot through its base giving off fumes at  $125^{\circ}$  below zero, or ammonia being sprinkled in a section of the cloud.

3

## PROBATE JUDGE'S OFFICE.

CUYAHOGA COUNTY

ALEXANDER HADDEN,  
PROBATE JUDGE.

H. A. SCHWAB,  
CHIEF CLERK.

CLEVELAND, O.

APR. 5 - 1911

The airship has been thought of for war and travel - why not consider the experiments which might be brought in the clouds or upper regions which contain moisture toward production of rain, the most saving to crops in the temperate regions.

I have talked with the best scientists & read the work, especially on rain, rain-making, dust, air, temperature, clouds, water, gases into fog, mist. It would seem that nature in her precipitation ~~can~~ might be paralleled artificially by shock, the introduction of dust, or the artificial lowering of temperature in a section or through the base of the cloud.

Of course I am only a layman and cannot give a scientific thoroughness to the possibilities - only indicate a subject which has led better posted men ~~than~~ than myself hope that such experiments might be tried. If you have any views on this subject or <sup>don't</sup> look at the entire matter as a chimera of the imagination, & it might please you to have one of your able assistants - if you cannot do so yourself - run the matter down & give me your views.

Yours Truly  
W. H. Hudson atty. St. East  
2305 Cleveland Ohio

RENTING  
INSURANCE

W. M. KING

ESTATES MANAGED  
MORTGAGE LOANS

EXPERT  
APPRAISER

FLATBUSH  
REAL ESTATE

831 FLATBUSH AVENUE  
CORNER LINDEN AVENUE

TELEPHONE 751 FLATBUSH

BROOKLYN, N. Y., *April 5* 1911

*Apr 4/11*  
Thomas A. Edison  
East Orange  
N. J.

*This scheme had  
been in use in  
Europe for 25 years  
I had written  
concerning it  
before*

Dear Sir,

I have an idea that  
telephone connections with the  
it is possible to listen to  
in your own home, during the  
Theater performances.

I ask you is this practical?  
If so I can see a big field  
of revenue for the Promoter, Telephone  
and Theater Managers.

Yours truly  
W. M. King



Denver Colorado 14th April 1911.

Thomas A. Edison  
AUG 25/11  
Mauls Park  
New Jersey

Whatever you request is

part of my life -

Why not provide the Government  
who have a Bureau of Experiments  
engaged in these lines?

Dear Sir,

Among ~~my~~ <sup>your</sup> manifold electrical achievements, particularly of a practical kind, you appear to have overlooked one; and one too of untold nocturnal comfort and too of boundless worth to the human race, at least, that part of it inhabiting the great North American continent. I refer to an apparatus which will extinguish beyond all possibility of resurrection, that parasite, that horribly filthy member of the entomological family, that insect chrysalis: the less lang of the republican continent. This insect, I believe, is alien to the Old World, being wholly comprised and wholly indigenous to the New. Its sole habitat, in its world, is manifestly the pine tree of our continent and of course its lumber. This red odorous, sanguineous heart and pine lumber are as palpably inseparable as the Siamese two to two. Where is the one there also is the other. Even pine lumber carpentered; which has been stationary for decades; say, flooring, lathing, studding, doors, window and door frames, sills, stringers, clapboard, etc, etc, is not exempt from its evil smell, roaches and phlebotomizing depredations. Even pine furniture is

not unfamiliar with its presence. It finds habitation wherever there is pine and unhappily it extends its dread domicile to furniture of other woods.

Now the purport of this letter is to ascertain whether or not from the exhaustless fertility of your inventive faculty, along of course electrical lines, you could not give the world, thus serving its everlasting gratitude, some apparatus, one of simple construction and without of easy application to houses, beds, furniture and generally to pine lumber wherever such enters into human service; to rid them permanently of this insect vampire. I mean an apparatus, electrical of course, which will fatally shock the living bug and effectually sterilize its nits, or more popularly speaking, its eggs - briefly, to render pine wood, however and wherever, reduced to practical purposes innocuous to and immune from insect occupation. Could not the tree while standing, by some electrical process, be rendered immune from insect life and so immune that the immunity would extend to the lumber while such, and after being reduced, by the carpenter and joiner, to domestic ends?

Respectfully  
Henry Galtou

1009  
Telegraphic Address: "ROTATOR."

A. B. C. Code used. 5th Edition.

Established 1840.  
ON GOVERNMENT LIST.

TELEPHONE  
Business No. 184.  
Residence No. 1596.

## Shalebhoy Tyebjee & Sons,

Ship Chandlers and Government Contractors,

Importers of Paints, Oils, Varnishes, Ropes and all kinds of Machinery, &c., &c.

*Say this is out of my line but suggest you say the whole matter before the Agr. cultural Experiment station*  
18 & 20, DALAL LANE,  
Bombay, 21st April 1911.  
Thomas A. Edison Esqr., author in England

The Greatest Scientist of Age

*who are organized for the very purpose of aiding the advance of agriculture in*  
Dear Sir,

*the British Empire*  
We take the liberty of approaching you, with a view to be helped, with your extraordinary power and knowledge of almost all the things, in this world, and we fully trust, you will be kind enough to let us know some way by which the Estate can be turned fertile, for which we will always pray Almighty God, for your very long life and prosperity.

We possess a large Estate of land in Gujarat (India) -- situated on a sea coast of Bulsar, known as Mr. Donald Graham's Bulsar Bhagal Estate, which measures about 7000 Acres. There is a wide -- plantation of about 8000 Coconut-trees in 65 acres of land planted systematically at a distance of 20 feet each and having facilities of 10 wells, 6 Windmills, 2 Oil Engines, 6 Country Bullock driving gears for drawing water. The land is ordinarily sweet, but looking at the trouble, which is taken to make the plantation a success at --- considerable expense, has not been fulfilled, and we are daily --- expecting to see an improvement, by giving more water than it was originally

(2)

originally given, when it was in the hands of Mr. Donald Graham of Scotland of the firm of Messrs. Graham & Co., of England, since 1882 to 1908, we see a little improvement since 1908, but not to our satisfaction. The Coccoanut trees, which we have, hardly bear fruits at an average of 10 coccoanuts per year instead of an average of least 75/100. As we are very anxious to see an improvement, will you be so kind as to show us a way, by which, we can improve the Coccoanut plantation and make it pay. Besides the above, the other lands we have, with the coccoanut plantation, has been reclaimed, some about --- 2000 Acres, since 40 years and the rest about 5000 Acres, since --- 26 years, by preventing sea water. Out of the above, about 750 Acres has been improved, suitable for rice cultivation, the rest has not yet improved for any crop. However little shoots of grass are seen mostly on 2000 Acres of land and partly on the 5000 Acres of land. Can this ground be made suitable for any commonest crop ? as it will pay well being a large area. Trees, called " Babul Wood " trees (Common wood - Trees) grow somewhere, on a very small portion of the Estate only. With all these particoulars, will you kindly give us some advice, as what best we should do to improve our vast Estate. The average -- rain fall on this side is 45/50 inches.

We shall ever feel grateful, for any advice, you will be - pleased to give us, and with our best thanks in advance,

We beg to remain,

Dear Sir,

Gratefully, Yours,

*Shalebhoj Tyebjee & Sons.*

Amst 7/20/11

New York 588 Broadway, Co  
May 18, 1881

Mr. Hon. A. Edison

Melting snow  
Electricity  
Evaporate  
Is it possible to  
melt and evaporate snow by electricity?

I believe there is  
a process for melting melting by using  
electric power. If electricity is powerful  
enough to melt iron, steel etc, do  
you think it can be used to actually  
dissolve and evaporate snow?

While, of course,  
by mixing certain chemicals with snow,  
it can be melted into water, these  
chemicals are too dangerous and couldn't  
be used in public streets, and then the  
water would probably freeze again.

It certainly is  
rather foolish of me to discuss a  
problem of this sort with you, for  
I understand nothing about it.

However, I do know  
that if you do get together some machine  
for doing this work it will be of greater  
service and do more good to the people  
than anything brought out during this

2 a. 6 2

Last century, for it isn't necessary  
for me to explain all the sickness etc  
caused by dirty snow lying in  
the streets.

Yours respectfully,

M. Newman.

Ed - Friends - Perkins

Geo. W. Perkins  
77 Broadway  
New York

Confidential

May 31st, 1911.

~~\_\_\_\_\_~~  
~~\_\_\_\_\_~~  
~~\_\_\_\_\_~~

Ans  
6/3/11  
Lam

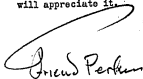
Mr. Thomas A. Edison,  
Valley Road,  
West Orange, N. J.

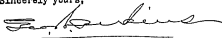
My dear Mr. Edison:-

This note will serve to make you acquainted with Mr. Bassett Cadwallader,  
the gentleman I spoke to your secretary about over the telephone this morning.

If you can spare him a few moments of your valuable time, both he and I  
will appreciate it.

Sincerely yours,

  
Geo. W. Perkins



Mr Cadwallader

Called on me, his scheme is  
"perpetual motion" getting something  
out of nothing -

Edison

Telegram

ALBERT H. BUMSTEAD  
LAND SURVEYS  
TOPOGRAPHICAL SURVEYS  
EXPERT CARTOGRAPHY AND LETTERING

Townsend Harbor, Mass.  
(Tel. Townsend 45)

Mr. Thomas A. Edison,  
Orange, N.J.

June 11, 1878

*June 11, 1878*  
*I think you would*  
*be the two large things*  
*we want that the*  
*management of the*  
*company has over the years*  
*we need our own*  
*type of invention*  
*in*  
*Patent*

Dear Sir:-

My brother has written you about his auto-  
matic, high speed, printing telegraph for which he has  
made patent application.

We are young men in the field of invention  
and now that we have designed something that in simplicity  
and speed we believe to be superior to any other  
printing telegraph, we need advice as to our  
next move toward placing our invention where it  
will do the most good.

I appreciate how busy you are with things  
that you know to be worth while and that I  
am asking a good deal when I ask you to give  
my brother a half hour interview. It is my  
belief that you will be enough interested in his  
explanation of our telegraph so that you will not  
consider the half hour wasted.

Hoping for a favorable reply I am  
Respectfully yours  
Albert H. Bumstead.



I & R

*Recd  
6/16/1911  
J.M.M.*



Hon. Legislative Council

Kingston, Jamaica,

Milson Esqr.,  
Engineer etc.

JUN 12 1911

*The problem you speak of is one to be enormously different of present times. I would like to know how it could be done. J. Wellington*

Dear Sir:-

Your world wide reputation has induced me to trouble you with the following:-

As by talking in the Gramophone we can have our speeches recorded why can this not in some way act upon a typewriter and reproduce the speech in typewriting.

Under the present condition we dictate our matter to a shorthand writer who then has to typewrite it. What a labour saving device it would be if we could talk direct to the typewriter itself! The convenience of it would be enormous. If frequently occurs that a man's best thoughts occur to him after business hours and after his stenographer and typist have left and if he had such an instrument he would be independent of their presence.

The days of sitting down and writing one's thoughts are now over. It is not alone that there is always the danger in that process of striking out and repairing as we go along, but I am of the opinion that most business-men have lost the art by the constant use of a stenographer and their thoughts won't run into their fingers. I remember the time very well when I could not think without a pen in my hand, now the reverse is the case and if I walk about and dictate the result is not only quicker in time but better in matter; and it occurred to me that such an instrument as I have described is possible and that if it be possible there is no man on earth but you who could do it.

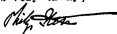
If my idea is worthless I hope you will pardon me for trespassing on your time and not denounce me too much for my stupidity. If it is, I think it is a machine which would be of general utility not only in the commercial world but also for Public

(2)

Speakers etc.

I am unfortunately not an engineer only a lawyer. If you care about wasting a few lines on me, drop a line to Philip Stern, Barrister-at-Law at above address, marking "Personal" & "Private" on the letter.

Yours very truly,

A handwritten signature in cursive script, appearing to read "Philip Stern", with a horizontal line drawn through the end of the signature.

9 PK

Sir

Write your invention down  
get it witnessed & then tell me  
what the scheme is, if a preliminary  
experiment is favorable I would  
invest in the work it up

Since 1880 I have experimented on direct transformation of  
heat into Electricity, as a pure laboratory pleasure.

My first thermo batteries yielded 1.5% of electric  
energy out of 100 Calories of fuel.

In 1898 I had gone to 5.8% of Watts out of 100% possible.

In 1906 I had obtained 28% of electrical energy from 100%  
Calories, but my batteries were frail.

I now have improved this so that I obtained, recently

1000 Grams densat. Alcohol burnt <sup>+ Benzine</sup> = 7400 Kilocalories

yielded

1100 Watt seconds

or about

1900 Kilocalories.

The batteries are now durable for at least 5 years.

A battery of 1000 Watt hours might cost \$200, weigh 100 Kilogr.

But I am utterly outside the wheels with this. If I take  
a patent, it will be simply \$75 lost to me.

If you can use the ideas, I sell them very cheap. Am a  
through analyst, chemist & mech. eng'ner, but rotten in business.

Yours, very truly  
C. Argyr

278 W. Water St. room 2  
Milwaukee, Wis.

Compressed Air

Phila June 12/11

Dear Sir

Waltham Mass  
with the apparatus  
No. 33, 311, and 615<sup>th</sup>

Electricity I noted that Mr Edison  
has patented the reheating of compressed  
air which I would like to have some  
information. If you have same on the  
market kindly send me some data  
and if same proves what I need I will  
gladly get in touch with you

I want to get some device where compressed  
air can be heated and carried a distance  
of 5 ft if you will kindly give me  
some information. It will be appreciated  
by

Yours very truly  
A. G. Berry  
20 1/2 E. Duane St

Lightning Rods

Staatsburg, DuSable Co. N.Y.

June 12<sup>th</sup> 1911

DuSable

Mr Thomas A. Edison -

any kind of ~~cast~~ rod

Dear Sir -

The end which is connected

Lightning rods are again being utilized in this locality and, owing to the prejudice which has been accumulating for years, people are suspicious. The County manufacturing these rods use the best of pure copper, and the analysis made by an expert, ~~proving~~ <sup>showing</sup> from ~~the~~ <sup>the</sup> ~~rod~~ <sup>rod</sup> ~~is~~ <sup>is</sup> ~~pure~~ <sup>pure</sup>, pronouncing it as pure as can possibly be made. Now assuming this to be the fact, will you please answer the following questions on this sheet and return to my address - The rod consists of 30 small wires, and in braids flat like sample which I enclose -

Do you consider this rod, because of construction & purity, as good or better than other make.

Do you consider a rod of this kind absolute protection from lightning, if properly put up and well grounded

How far apart should the distributing pointers, (which are about 6 inches high) be placed -

Are high trees close to a house a protection from lightning and to what extent -

would you advise roding such trees, or the houses  
are the Ploms, placed in rural houses, harness under  
grounded, and do you recommend the system marked in  
the enclosed book on page 29-

Is the information found in this book, such as can be  
relied upon, so far as the laws of lightning are concerned-

Are the Static Machines used in the study of electricity, &  
do they give a true demonstration of conditions attending a  
stroke-

A personal reply will be greatly appreciated, and any other  
information you may deem best to give will be accepted  
with many thanks-

Very Respectfully Yours

Septus E. Ludon  
Statenburg, Dutchess Co. N.Y.  
R.F.D. #56.

P. R.

120 Hackensack Str.  
E. Rutherford, N. J.

June 20, 1911

Thomas A. Edison Esq.  
Orange, N. J.

JUN 28 1911  
Ams 6/24

Dear Sir,

Will you kindly take the time, to read this  
letter, and give me your answer, yes, or no, if my  
idea is practical, to use hair, in place of  
stuffing, in Mattresses, and quilts.

I will be ever, so much obliged, and pardon  
my boldness.

The idea is <sup>using Rubber</sup>  
practicable <sup>and I use</sup>  
on some <sup>of my</sup> mattresses. Respectfully  
Yours,  
Wm. Johnson

J.R.

Do not make  
3335- ~~the~~ <sup>any</sup> ~~factory~~ <sup>white</sup> ~~account~~  
Hydraman Co.,  
Phila. Pa.

June 23 1911

Edison Cement Co.  
Orange, N.J. JUN 23 1911  
Gentlemen, AUTO 17

Please give me  
all the information you can  
concerning white cement,  
and also send sample if  
convenient.

Yours truly,  
Chas. A. Carter



Ans 7/10

Lover Del July 6<sup>th</sup> 1911

Mr Thomas A Edison

Dear Sir Day that <sup>all of your many experiments</sup> ~~has not been~~ <sup>successful</sup>

I saw in a paper more than a year ago that you was making an Automobile shoe to take the place of a Rubber shoe that is now in general use. I have watching the Automobile news ever since hoping to find something more about it for I have great faith in all of your undertakings as you generally make what you undertake a success

If you have the time to spare I would be pleased to have you tell me something about it, when if you know that they will be for sale and what you will use to take the place of the air Tube in fact all you may be pleased to tell me will be very interesting to me for I feel very much interested in them for I am tired of the air Tube and would be glad to own something that is an improvement over them

Yours truly  
Enoch Clark

CLINTON GRAHAM & CO.

10 WALL STREET

TELEPHONE 1183 REXTON

NEW YORK July 17th, 1911.

*A great number of inventors  
have worked on this idea  
but so far nothing practical  
has come from it*

Thomas A. Edison Esq.,  
Llewellyn Park, New Jersey.

*Recd. July 19  
18 11*

Dear Sir:

*The Reading people will  
not buy - S*

In bringing before your notice the following I trust you will consider the same as confidential if the idea does not appeal to you, or if it has not already been thought of. It is my desire, naturally, to profit by any result that may be obtained, should you deem it worthy of consideration, and the same be perfected and be a success. Being a New Yorker bred and born, I have been and am a constant traveller on the various transportation lines in this city, and there has been in the past, and is daily brought to my notice the great inefficiency of all said lines in announcing the names of the immediate and future stops. It is not necessary for me to dwell upon the importance of having such stops, so announced, that each and every one in a car, either crowded or otherwise, may hear, or the duty that the companies owe to the travelling public in this respect. It seems to me it is too self evident to need persuasion. My idea is to have a phonograph placed in the ceiling of each car, in the centre, of course, with a horn pointing towards each door, that the machine may be wound either electrically or by hand, and a record of sufficient length be made, so as to include each and all stops, and to announce the next station. The machine can be easily operated by a small attachment to the car which in turn could be tipped by something fixed upon the station platform. Your phonograph is the only one adapted to this idea, owing to the possibility of making a record of any length desired. Of course I have only theorized upon this, and am not an inventor in any way, and it would therefore be impossible

T. A. E. #2

for me to complete the details, but I am certain it would be a perfect system of announcing, if it can be perfected. My only doubt about it is the cost of the machines, which I fear would be too expensive for the companies to install. Hoping I may have the pleasure of hearing from you in the near future, I am,

Yours very truly,

Clinton G. Bohann

T.A.E. handwriting



U. S. REVENUE-CUTTER

ONONDAGA

Mr. Thomas E. Edson,  
Patterson, N. J.

Dear Sir:

Recognizing in you the foremost practical scientist of our day and one who turns his genius to meeting the mechanical needs and removing the difficulties which frequently beset man-kind, I have the honor to suggest and submit a practical problem for your consideration and solution.

Before submitting the problem however, a short explanation is necessary. I am a commissioned officer in the U.S. Revenue-Cutter Service; and I have direct knowledge and experience of what I write. Frequently Revenue-Cutters and other sea-going vessels equipped with efficient wireless-telegraph plants (as now required bylaw) have the most urgent and vital reasons for meeting or falling in with, at sea, other vessels similarly equipped, in the very shortest possible time. (For instance in the case of a marine disaster, when an endangered or doomed steamer summons to her immediate assistance any vessel which may chance to be within wireless-call, to save the lives of those on board).

When such a call has been heard and answered, the distressed vessel usually indicates her position to her would-be rescuer in terms of "Latitude and Longitude", and the rescuer "shapes his course" accordingly. But very often due to fog, cloudy weather and consequent impossibility to take astronomical sights, ocean currents or other causes, the exact position of one or both vessels (which are trying to meet) is only approximately

~~Handwritten scribble~~  
I am sorry that the problem is pretty difficult and I am so busy to work at it. I understand there is a system now

10/18  
I use wireless telegraph having wireless diaphragms under water attached to ship & ear tubes present of a sound from bell as follows: diaphragm in distant ship & ear in my ear of 15 miles by the way

*Handwritten signature*

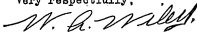
TREASURY DEPARTMENT  
REVENUE-CUTTER SERVICE  
Norfolk, Virginia

known and cannot be determined with precision; and so accurate courses cannot be pursued and frequently much valuable time is lost in searching a locality before getting together; notwithstanding that both ships may have been in almost continual wireless communication as they approached each others vicinity. Under such circumstances, I have noticed that an experienced wireless-operator may be able to give a navigator a helpful clew, in a general way as to whether the two vessels are nearing or becoming more distant, by noticing whether the other vessel's messages continue to be heard louder and louder, or if they become fainter and fainter; and by the intensity with which they be heard may even hazard an opinion as to the distance off of the other vessel; but the receiving operator by means of his instrument cannot tell in what direction the vessel talking to him lies .

The problem then, which I submit and the difficulty to be overcome, is the invention and construction of some mechanical or other appliance or attachment to be used with the wireless-telegraph which will indicate to an operator the direction of the vessel or station whose messages he may be receiving.

Such an invention if placed on the market would not only be useful in facilitating vessels meeting at sea, but would also be of great value in fog and other thick weather in preventing collisions; also in clear weather when several similar vessels appear on different parts of the horizon it would be of use by means of indicating the direction in identifying such as messages be exchanged with; and it be desired to speak".

Very respectfully,



1st Lieut., U.S.R.C.S.

Address:—

Lieut. W.A.Wiley,U.S.R.C.S.,  
U.S. Revenue-Cutter ONONDAGA?  
Norfolk, Virginia.

W. N. SPENCE

M. C. BENNET

**SPENCE & BENNET**  
ATTORNEYS AND COUNSELLORS AT LAW  
CAMILLA, GA.

*J.R.*  
*Reddella*  
*10/10/11*

*This scheme you mention has been tried Oct. 7, 11 but the improvement is too slight to make it commercial*

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:

In listening to a phonograph last night an idea occurred to me that I decided to submit to you to see if there is anything in it. It is very probable that the same idea has already occurred to you and the experiment tried.

As our ears are situated a few inches apart, just as are our eyes, it occurred to me that possibly there was such a thing as a "perspective" (if I may so call it) to sounds as there is in looking at an object; and that possibly, in making a phonograph record, and reproducing it, with only one needle, did not give the sound the proper "perspective", just as it is necessary to have a stereoscope to give a picture the proper relief. I thought that possibly a more life like record and reproducing of sound could possibly be made by having two recording needles, situated in relation to the sound about as the human ears are, and a double reproducer. If this idea has not already been tried I submit to you for whatever it may be worth, if anything.

Yours truly,

*M.C. Bennett*

*Ans 10/25*

99 Clarissa St, Rochester, N.Y.  
October 23rd, 1911.

Thomas A. Edison,  
Orange, N.J.

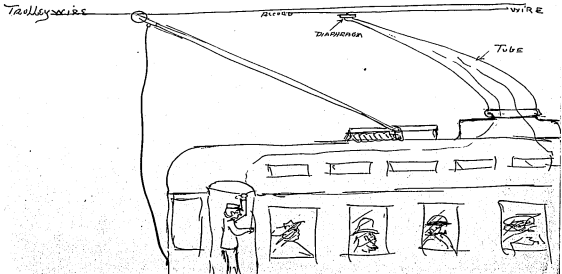
*Says your idea is  
practicable but the Cox Co  
won't pay a cent &  
the inventor would  
lose his money*

Dear Sir:- Would it be practice to arrange a phonographic transmitter on top of a trolley-car and have it announce the streets by coming into contact with records of the streets, strung up parallel to the trolley wire; short a traight records strung up midway between streets. With such an arrangement it seems possible for any car to run over any line and automatically announce the "next street" to the passenger who are too often strangers in the cities and misunderstand the conductor. With such a rig there would be nothing to look after but the phonographic mechanism should it get out of order.

yours admirngly,

*J. G. Ricketts*

sketch



W. T. OSBORN, Pres.

HERMANN C. HENRICH, Sec. and Treas.

W. T. OSBORN ELECTRICAL CO.

ELECTRICAL ENGINEERS AND CONTRACTORS

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LIGHTING AND POWER DISTRIBUTORS,  
STATION AND MOTOR ROOMS,  
ELEVATORS AND ARC LAMPS,  
TRANSFORMERS, TELEPHONES,  
WIRING, CABLES, ETC.

*say out of my line  
that since Vaid got hold of the W. T. O. Co.  
they are more liberal  
inventors in my  
line - the W. T. O. Co.  
use the 10 -*

Thomas A Edison - East Orange N.J.

NOV 13 1911  
W. T. O. Co.

Dear Sir: Knowing that inventions  
are developed and commercialized  
by your company, I am writing  
you a few facts relative to  
an invention that I have developed.  
I have an operating model of a  
Typewriter Telegraph machine.  
A. S. Smith standard Typewriters are  
used at both transmitting and  
receiving ends. A Telegraph Transmitter  
is connected to the transmitting  
typewriter so that as the typewriter  
is operated impulses of the morris  
type are sent in to the line, at a  
much higher speed, but otherwise the



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TRANSFORMERS, TELEPHONES,  
WIRES, CABLES, ETC

KANSAS CITY, MO.

same as manual morris. The longest signal for a thirty five character machine is two dashes and two dots, the shortest two dots. At the receiving end a group of ten small relays operated by the tongue of the line relay serve to select any unit of the group to be operated. These ten relays operate pneumatic valves in such a way that the pneumatic unit operates the typewriter key at the receiving end corresponding to the one depressed at the transmitting end. The transmitter is very simple in design and could be M. F. Q. for about \$2.00 each, exclusive of typewriter. The ten relays which constitute the selector should not cost more than \$8.00 to produce in quantity. The pneumatic connections for the receiving

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STATIONARY MOTORS,  
INCANDESCENT AND ARC LAMPS,  
TRANSFORMERS, TELEPHONES,  
WIRES, CABLES, ETC

KANSAS CITY, MO.

Typewriter, including a small motor, an exhaust air pump, equalizer, a large pneumatic bellows for returning the carriage ~~that~~ and spacing links, and the unit or individual pneumatics for operating the keys of the typewriter, can be bought from player piano companies at a cost of approximately \$25.00 for each machine. I have spent a large amount of time and money in developing a system that will operate over any morse circuit, that ~~can~~ can be built at an extremely low first cost. That can be maintained in operation with as little or even less attention and expense than the ordinary typewriter. Messages may be transmitted and reproduced plainly typewritten at the full operating capacity of a typewriter.

W. T. OSBORN, Pres.      HERMANN C. HENHIGL, Sec. and Treas.

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STATIONARY MOTORS,  
INCANDESCENT AND ARC LAMPS,  
TRANSFORMERS, TELEPHONES,  
WIRES, CABLES, ETC.

KANSAS CITY, MO.

I am prepared to verify the foregoing statements by actual demonstration, if you find it convenient to send one of your representatives to inspect my machines, at 702 Delaware Street in this city.

The market for my profession is the A. T. & T. An organization like yours could commercially a profession of this kind and make the A. T. & T. pay for your machines and not steal them as they would from a small company.

If you would consider handling this profession on any basis I would be willing to make you very liberal terms. Hoping to receive an early reply

I am,  
(2895 to 8th St.)

Yours Truly,  
H. W. Carpenter.

WILLIAM T. WELLS,  
MELBOURNE, INDIAN RIVER, FLORIDA.

*Ans 12/12/11*

*Say  
Cannot use said iron oxidized  
am compelled to get it chemically*

November 28th, 1911.

Thos. A. Edison, Esq.,  
Orange, N. J.

Dear Sir:-

Having been connected with the development of so called "Rustless Iron" produced by the Bower-Barff and the Wells processes it has often occurred to me to ask why oxidized charcoal iron could not be used to advantage as a pole of the storage battery.

I am the inventor and patentee of the "Wells Process". But I know very little about storage batteries and therefore writing to the man who knows most about them. I am told by an engineer that in your new battery you use flakes of pure iron in glass receptacles.

Why would not the almost pure iron between the oxide coats of a sheets of charcoal iron be lighter and perhaps better? As you know, the magnetic oxide coating (especially that made by the Wells Process) is impervious to a rather strong mixture of sulphuric acid and is also a very poor conductor of electricity. By drilling holes thro the sheets your electrolyte would be able to reach the inner iron.

Forgive my taking up your valuable time if the idea is of no value.

Very truly yours,

*W. T. Wells*

*F*

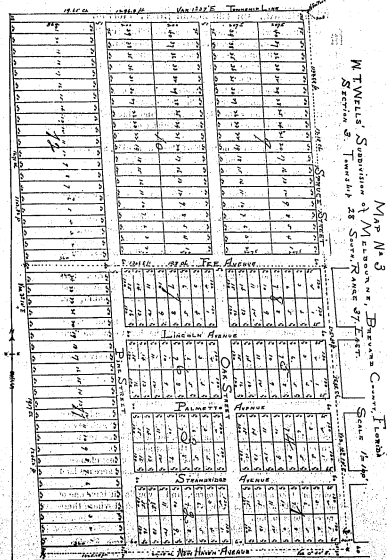
[ATTACHMENT/ENCLOSURE]

# MELBOURNE HEIGHTS

PLAT NO. 3

SHOWING LOCATION OF LOTS, SOME OF WHICH ARE STILL UNSOLD.

All Lots are offered subject to previous sale.



Our Lots are on the High Table Land Overlooking The Indian River.  
**WILLIAM T. WELLS, MELBOURNE, FLA.**

---

**THE HIGHEST AND HEALTHIEST  
SECTION OF THE EAST COAST.  
MELBOURNE, On The Indian River, Florida.**

**In** Deciding at what place to locate a WINTER HOME there are several things of great importance to consider.

**FIRST** is the healthfulness of the proposed location.  
**SECOND** is whether the place is accessible to the rest of the world and in a beautiful situation.

**THIRD**, is the place in the back woods or will one have the benefit of good Schools, Churches, Stores, Physicians, etc

**FOURTH**, is the place settled by congenial, and educated people  
All of these questions can be answered satisfactorily in regard to Melbourne, Florida.

Melbourne is a small town on the East Coast of Florida, about midway between Jacksonville and Miami. It is not so far South that the climate is enervating, and is far enough South to insure pleasant days all the winter through.

There is an occasional frost here just the same as there is a frost now and then away down South of Miami.

The land here is suitable for growing Citrus Frutas and also vegetables. All our lots as offered in this circular are big enough to grow a few orange and other fruit trees, and the larger lots are many of them big enough to raise Oranges, Grapefruit, Tangerines, Limes, Guavas and Vegetables for a big family and some to spare.

There is an abundance of good healthful water at Melbourne. This makes for the healthfulness of the place, as no town can be in a good sanitary condition that has not plenty of good water for drinking and other purposes.

The train service on the Florida East Coast Railway is one of the finest in the South, and Melbourne is one of the big towns on their line.

Melbourne is located on the Indian River, which is a body of salt water, and is really a SOUND and is not a river.

The Indian River at this point is two miles wide, and just beyond the strip of sand on the East side is the Atlantic Ocean.

Surf bathing can be indulged in the year through.

Melbourne has a number of good stores, three churches, and a good school, while one of the County High Schools is only four miles away. Melbourne is not a manufacturing town, but a residence town for well to-do northerners people who spend their winters here.

There are two good Hotels, and a large new one is being planned. As there has been no BOOM the prices of lots and acreage land are still very reasonable.

Come and take a look at Melbourne, and if you like it buy one of our lots and build yourself a home where life is easy and where there are no coal bills to pay.

For further particulars address

**WILLIAM T. WELLS, Melbourne, Florida,**

Or

912

ROBERT H. KANE  
ATTORNEY-AT-LAW  
216 CORONADO BUILDING  
PHONE MAIN 4881

DEC 6-1911  
Rev 17/7

Denver, Colo., Dec. 2d, 1911.

Mr. Thomas A. Edison,

Menlo Park, N. Y.

Dear Sir :-

Your correspondent in writing you expresses on your good will for anyone who has an idea and likes to investigate and exploit it. Very recently in the Auditorium in Denver at a public concert, I became lost in thought over the value of an invention which would make it possible to hear with ease all over the building. My thoughts took these forms: Is there not electric machinery today which could be utilized for this purpose? We have ozone machines to purify our rooms. Does purifying the air aid the conveyance of sound? Have we not electric machinery that will produce a sonic wave motion in the air carrying sound? Could we not have a combination of ideas that would accomplish the purpose? Music coming over the water acquires a sweeter tone. Is there principle there that can be used?

In talking to a friend he says: " Write to Edison " Hence this letter.

I am,

Very truly yours,

Charles E. Dey  
1827 Champa St.,  
Denver, Colo.

*In Pando Petth Hungary they collect music from the opera houses & distribute to all the best of the volume*

*has done in the past*

*is possible to hear*

*Is there not electric machinery today which could be utilized*

*for this purpose?*

*We have ozone machines to purify our rooms.*

*Does purifying the air aid the conveyance of sound*

*Have we not electric machinery that will produce a sonic wave motion in the air carrying sound?*

*Could we not have a combination of ideas that would accomplish the purpose?*

*Music coming over the water acquires a sweeter tone.*

*Is there principle there that can be used?*

*Concussion*

J & R.

## THE HOPLEY PRINTING CO.

INCORPORATED  
THE EVENING TELEGRAPH, DAILY  
THE BUCYRUS JOURNAL, WEEKLY  
BUCYRUS, OHIO

Bucyrus, Ohio, Dec. 10, 1911

Thomas J. Edison,  
Orange New Jersey.

Dear Sir:-

Went into my office tonight and it was dark and I  
groged around in the dark for the incandescent.

Why could not a very small incandescent be placed  
on the but of an incandescent or on the tumb snap  
you snap them off and on by to burn constantly as a tell  
tale so you could locate them readily.

If the idea is worth any thing use it.

Very truly yours,

The Hopley Printing Co.,  
per J. W. H. Mgr.

NOV 12 1911  
Dec 12/11

It could be done but you  
could paint a circle 1 foot  
in diameter with Balmain  
Luminous paint & it will  
Glow up sunlight in day  
time & shine all night

YOU'LL FIND BOTH OF THESE PAPERS ON PRINTER'S INK ROLL OF HONOR  
ADVERTISERS FIND THEM THE BEST MEDIUMS BECAUSE SUBSCRIBERS GET THEM THE BEST NEWSPAPERS



**Edison General File Series  
1911. Articles (E-11-03)**

This folder contains correspondence requesting Edison to write articles, letters from journalists seeking to interview him, and unsolicited correspondence relating to articles about Edison or his inventions. Several items pertain to an interview concerning German industrial organization. The correspondents include Richard H. Edmonds of *Manufacturers Record*; Robert Underwood Johnson of *Century Magazine*; Roger W. Babson of *Babson's Reports*; and journalists Edward Marshall and Arthur B. Reeve.

Approximately 10 percent of the documents have been selected. The items not selected include requests for interviews and other routine correspondence regarding articles and interviews.

*Publ* 2-11-10-2M



JANUARY 8, 1911.

MR. THOMAS A. EDISON,

ORANGE, N. J.;

DEAR MR. EDISON: WILL IT BE CONVENIENT FOR YOU TO GIVE THE WORLD A FEW MOMENTS AT SOME TIME  
ON TUESDAY OR WEDNESDAY, WHEN I MAY TALK OVER WITH YOU A MATTER IN WHICH WE ARE MUCH INTER-  
ESTED, AND ON WHICH WE SHOULD LIKE ESPECIALLY TO HAVE YOUR OPINION BY REASON OF YOUR WORK  
TOWARD THE PHYSICAL WELL-BEING OF THE PEOPLE?  
WE SHALL VERY GREATLY APPRECIATE YOUR COURTESY.

SINCERELY YOURS,

*H. P. Brazell*

EDITORIAL STAFF, THE WORLD.

*Yes; if you send a "High brow"  
Edison*

*JAN 9 1911  
Ans 1/10/11*

906

Metropolitan Club  
Fifth Avenue & Sixtieth Street

Jan'y

Dear Mr. Edison

JAN 10 19

I requested the  
Stenographer to return the  
notes you kindly lent me.  
They were sent for you via  
Mr. Miller's care

I suppose you have seen  
the two clippings in the  
Gold Production

Faithfully  
Yours  
J. M. S.

[ATTACHMENT/ENCLOSURE]

**GOLD PRODUCTION FELL OFF.**

Estimates of Mint Director for Year 1910.—The American

Washington, January 4.—Production of gold fell off all over the world during 1910, according to a preliminary estimate prepared by George E. Roberts, Director of the Mint. Mr. Roberts is of the opinion that any possibility of an embarrassing over-supply of gold, with the attendant rise in price which economists predicted to go with it, has been passed.

More than \$94,000,000 in gold was mined in the United States during the year. Africa led the world with more than \$15,000,000. Australia was third with \$8,000,000.

California regained first place among the gold-producing States, which she had lost to Colorado in 1907, due, it is said, to the development of Ordege mining. Alaska showed a falling off.

The total silver production of the United States during 1910 is estimated at \$6,000,000 fine ounces, of which Montana led, with 11,000,000, with Utah a close second.

For a series of years, the gold-production of the three great gold-producing countries has been as follows, in values:

|           | United States. | Africa.      | Australia.   |
|-----------|----------------|--------------|--------------|
| 1913..... | \$16,450,000   | \$15,000,000 | \$18,000,000 |
| 1912..... | \$4,800,000    | \$4,480,000  | 7,980,000    |
| 1911..... | \$4,560,000    | \$6,820,000  | 7,337,000    |
| 1910..... | \$9,437,700    | \$19,672,000 | 75,000,000   |
| 1909..... | \$4,374,000    | \$14,881,000 | \$3,400,000  |
| 1908..... | \$5,160,000    | \$14,616,000 | \$5,321,000  |
| 1907..... | \$9,723,000    | \$5,213,000  | \$7,187,000  |
| 1906..... | \$3,961,000    | \$7,616,000  | \$8,316,000  |
| 1905..... | \$9,000,000    | \$3,613,000  | \$1,578,000  |
| 1904..... | \$8,480,000    | \$,380,000   | \$7,885,000  |
| 1903..... | \$8,171,000    | \$,673,000   | \$7,488,000  |
| 1902..... | 7,553,000      | 7,188,000    | 78,211,000   |
| 1901..... | \$4,461,000    | \$1,113,000  | \$4,850,000  |
| 1900..... | \$7,333,000    | \$3,213,000  | \$2,650,000  |
| 1899..... | \$3,083,000    | \$5,135,000  | \$4,077,000  |
| 1898..... | \$8,810,000    | \$4,718,000  | \$4,854,000  |
| 1897..... | \$9,590,000    | \$1,793,000  | \$4,871,000  |

*Publications*

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ALWAYS ON HAND TO  
COVER THE MOST  
DIFFICULT  
— ASSIGNMENTS

BRANCH OFFICES  
SAN FRANCISCO LONDON  
PARIS BERLIN ROME

NEW YORK, Jan. 14th, 1919

Mr. Thomas F. Edison,  
Orange, N. J.

Dear Sir:-

If it is convenient to you we wish you would favor us with an appointment to make some photographs of yourself in your laboratory. "The Business Magazine" who in their March number are publishing an interview you gave to one of their special writers, are very anxious to have one or two special photos to go with the article, and have asked us to try and arrange with you to get these pictures.

We have made pictures of you some five or six years ago but as they have already been published in papers all over the country we are more than anxious to get some new poses.

Awaiting your early reply,

Very truly yours,

*Arthur R. Brown*  
*any time*

CONSTANTLY RECEIVING NEW PHOTOGRAPHS FROM OUR CORRESPONDENTS IN ALL PARTS OF THE WORLD.

*Publishers*



THE NATIONAL MAGAZINE  
BOSTON, MASS.  
EDITED BY JOE MITCHELL CHAPPLA.

*Rec'd Plus*  
1911

21st January 1911

Mr. Thos. A. Edison,  
c/o National Phonograph Co.,  
Orange, New Jersey.

My dear Mr. Edison:

Was wondering whether I would be able to see you before you leave for Florida. You know I always feel that a year is quite incomplete unless I can have the pleasure of shaking your hand and paying my respects.

Am sending you copy of our Florida issue, in which I thought you might be interested. You will be glad to know that it has made a success far beyond our most sanguine expectations.

With cordial best wishes, believe me

Yours sincerely,

*J. Mitchell Chappla*

Jmca

*Very truly, not go down to Florida you will be out Lab & every day Dec 1911*

*S*

9016

REPORTS ON FUNDAMENTAL  
CONDITIONS

CONFOUNDED CIRCULARS  
OF KING OFFENSES

OFFICE OF

ROGER W. BAINSON

(INCORPORATED)

"BAINSON'S REPORTS"

ADDRESS SENT TO OUR } WELLSLEY HILLS, MASS. JAN. 21/11

COMPILING OFFICES. } (BUREAU OF REPORTS)

*Wash 1/25/11*

*Bainson - I am very much struck  
with a new gold process invented by  
and called the Clancy process <sup>JAN 23</sup> 1911  
The address is Moore Filter Co 170  
Thomas A. Edison, Esq.,  
Orange, N. J.*

Dear Mr. Edison:-

*Produce ref - you might  
refer your correspondent to*  
You would be interested to see the ~~them~~  
correspondence which I have had relative  
to the Gold Production article in the  
Saturday Evening Post. Most of these  
comments I have thrown in the waste-basket  
but the enclosed is a letter from responsible  
people, and I suggest that you read it and  
return it to me with any suggestions that  
you would like to have me write these people.

In case you see another interview in  
~~the Saturday Evening Post~~ within a week or  
two, ~~my~~ <sup>my</sup> first interview with you was divided  
into two parts and they have only published  
one-half and therefore at any time may publish  
the balance. I shall not put in print any  
of the conversation which we had at your house  
last week, and in fact, I think you and Mrs.  
Edison can both trust me no use no information  
or remarks unless first receiving information  
from you. With kindest regards, I am,

Very truly yours,

H.B.P.

c

Although obtained from sources believed to be accurate, our reports and opinions are not guaranteed. However  
they are given in strict confidence for the use of subscribers only.

Pat

247 WEST 104 STREET,  
NEW YORK, N.Y.

Say I am out of  
Feb 20. 11

Dear Sir,

In 1897 when I was in New York you very  
kindly saw me and gave me an interview  
which I published in Pearson's Magazine in  
London.

I am in New York for ten days now -  
would you see me one day at your  
convenience -

Perhaps I might be able to write about  
your new storage battery in London, and other  
matters in which you are interested if you  
will see me and furnish me with illustrative  
photographs.

Trusting to hear from you at your  
early convenience -

Faithfully,  
Dudolph de Cordova

FEB 24 1911  
Ans 27/11/10



With grateful thanks

Summerfield Boys

Albert Road,

Aston Manor,

Birmingham.

Aug 31/18

Say thank you

for the little  
pamphlet  
concerning  
the  
Marsden  
case

7-5. and

the  
re-  
view  
of  
the  
case

when  
it  
will

Dear Mr. Edson,

I have enjoyed  
reading your  
book on your New Strong  
immensely and should like to write  
a little article on it when I have studied  
it more carefully that so of course  
if you have no objection to my  
using it in that way also would you  
allow me to copy the excellent  
illustrations in one or two cases?

I enclose a notice of my first  
little work on accumulations as I thought  
you would like to see that I was at  
least interested in the subject. Do you think  
there would be any <sup>one</sup> thing for a person like  
myself in America than in England? Harold H. W. Co.

[ATTACHMENT/ENCLOSURE]

No. 19.—The S. & C. Series. Price 1/6 net.

THE CARE AND MANAGEMENT OF  
**IGNITION ACCUMULATORS**  
AND  
**Electric Light for the Million**

CONTAINING

Practical information on the Charging and Repairing of Motor Cycle,  
Motor Car, and other similar Ignition Accumulators. Also  
the adaptation of a slightly larger genus to a unique  
system of Electric Lighting

BY

**HAROLD H. U. CROSS**

With 12 Illustrations and 66 pages of Text

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—The Accumulator in the Home

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*Spon & Chamberlaine* 123 Liberty Street N. York

James  
Making Plans and Superintending Construction  
of Mills and Factories a Specialty.

Civil and Mechanical Engineering, also 25 Years'  
Experience in Hydraulic Work.

James McCarty  
Architect and Engineer

P. O. Box 168

Hudson Falls, N. Y., March 6<sup>th</sup> 1911

Balloon  
Rendevous  
700  
Thomas A. Edison  
Orange, N. J.

Dear Sir:

I have been a student<sup>1911</sup> of the economic problems involved in the question of a just and proper medium of exchange.

Permit me to say, that the basic truths propounded by you in a reported interview, as published in the Saturday Evening Post of Jan. 14 and Feb. 4<sup>th</sup>, go to the very foundation of the whole monetary question.

In a few sentences, you state more of vital interest to humanity than will be found in the eighty volumes of the report of the Monetary Commission.

The use of the precious metals for a medium of exchange, is a relic of barbarism; fitted for the conditions of the former migratory tribes on the plains of Asia.

Your statement, in substance, that the only function of currency is to provide a medium of exchange for useful commodities, is the "whole story in a nutshell".

And notwithstanding your wonderful achievements in the past, the great service to the race

James McCarty  
Architect and Engineer

P. O. Box 168

E. C.

Hudson Falls, N. Y., of March 6 1916

which you could render, by educating  
the people in the truths involved  
in the one-all important, and greatest  
question of the age, would redound to  
your everlasting credit.

The late Justice Brown agreed with  
you, exactly, as to the dangers threatened  
by constantly piling up evidences of  
indebtedness, which are never to be paid.

You may not have taken the trouble  
to compute the indebtedness of our people,  
in all directions, at the present time. Adding  
all the items of indebtedness, they amount  
to more than all the real estate value in  
1900: which was 55,000,000,000\$. It would  
require all the money in the country to pay  
the interest on this sum for a single year,  
to say nothing of the principle, which it is  
the policy of the financiers never to pay.

I will send you magazine articles, by  
your humble servant, on this great question.

Very truly yours,

J. M. McCarty

REPORTS OF FUNDAMENTAL  
CONDITIONS

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(INCORPORATED)

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ADDRESS REPLY TO OUR  
COMPILING OFFICE:

WILLESLEY HILLS, MASS.  
(SUBURB OF BOSTON)

Mo. 8/11

Mr. Thomas A. Edison,  
Orange, N. J.

*file*

MAR 9-

Dear Mr. Edison:-

I herewith return, as per request, the letter which your secretary has sent to me and was much interested in reading the same. Of course I have received a number of complimentary letters; but have not sent them to you because I do not wish to unnecessarily trouble you. In fact, the entire interview was splendidly received, and although I do not ask it, I should be very glad to have you sometime send me notes on another interview which I could use.

I also wish to take this occasion to congratulate you on the name of your new corporation, namely, "Thomas A. Edison, Inc.". Certainly your name is a great asset and it has always seemed a shame to me that it has not been used more by your various corporations. In fact, I have felt that it was a great mistake to have your phonograph company called "The National Phonograph Co." as it lacked your personality, which is what we all admire. With kindest regards to Mrs. Edison and yourself, I am,

Very truly yours,

*Roger W. Hadson*  
Pres.

R. W. H.

Although obtained from sources believed to be accurate, our reports and opinions are not guaranteed. Moreover they are given in strict confidence for the use of subscribers only.

THE OSAKA MAINICHI SHIMBUN. (OSAKA DAILY NEWS.)

OSAKA, 10th. March, 1911

*McDonald*  
*write & consult for*  
*Mr. [unclear]*  
*11/11*

Dear Sir,

With every respect we implore you to excuse us for writing to you without due regard to the usual etiquette observed on these occasions, and also for troubling you by asking you for doing us a favour.

The "Osaka Mainichi Shimbun" (the Osaka Daily News) is going to celebrate its attainment of the ten thousand number on the 22nd. June this year. To commemorate the occasion we are going to publish on that day copies consisting 100 pages, and among other contents we contemplate to reproduce the facsimiles of writings by celebrated men and women of the World. It is with this view that we venture to write and ask you to grant us a favour by your letter. However, we do not dare to hope too much. What we desire and shall be satisfied with will be your signature and, if possible, your writing with it. If we allowed to suggest, however, we should deem it a great favour as well as a great honour if you would be good enough to write a few words by way of congratulating us for the celebration of the occasion.

THE OSAKA MAINICHI SHIMBUN. (OSAKA DAILY NEWS.)

OSAKA, ..... 19 ..

Will you allow us to present you some facts concerning the "Osaka Mainichi Shimbun" ?

- The "Osaka Mainichi Shimbun" was established on the 11th. February, 1882.
- The Osaka Mainichi & Co. publishes another paper in Tokio in the name of the "Tokio Nichi-Nichi".
- The registered circulation on the 1st. January, 1911 is 218,798.  
( It is a publicly admitted fact that the "Osaka Mainichi Shimbun" has the largest circulation in Japan)
- The "Osaka Mainichi Shimbun" has its special correspondents in the principle capitals in Europe and America.

We beg to send you under another cover a copy of the "Osaka Mainichi Shimbun" which will we hope give you an idea of the newspaper. Hoping you will kindly meet our desire and thanking you for your favour in anticipation.

we remain, Dear Sir,

Yours faithfully,

*M. Watanabe*  
Managing Editor.

Publishers

EDITORIAL DEPARTMENT  
THE CENTURY MAGAZINE  
UNION SQUARE, NEW YORK

ROBERT UNDERWOOD JOHNSON,  
EDITOR.  
CLARENCE CLOUGH BUEL,  
ASSOCIATE EDITOR.

March 27  
1911

412 CS  
10/3/11  
Dear Mr. Editor:

We have an interview with you, you know, by Mr. Waldo P. Mason, and might interestingly it is. We hope to write it before long.

Can you tell us of a first-rate portrait - of your self by a good painter which we might consider for reproduction - something that hasn't been reproduced

in the books or magazines?

I haven't had time to thank you for sending me the photograph of your Cement-house type. It's very neat and pretty - but I believe a first-rate architect would improve on it.

That's a big idea of yours, however, for which many will rise up and call you blessed.

Can't you invent a collapsible <sup>non-toxic</sup> escape that can be thrown out of the window before one is suffocated? Some staircases are not sufficient if they are filled with smoke. This Washington Place horror is always in my mind. Yours with old-time regard,  
R. W. Johnson.



[ATTACHMENT/ENCLOSURE]

I will sign

Say there is no good painting  
of myself extant,

You are right a good architect  
could improve the  
appearance of the house

~~to be a good architect~~

~~to be a good architect~~

~~to be a good architect~~

~~to be a good architect~~

I think the type I have

~~to be a good architect~~

~~to be a good architect~~

~~to be a good architect~~

~~to be a good architect~~

I think there is a

good solution of a method

of making buildings death

proof - ~~to be a good architect~~

Edison T. S. Standard

*Ans 4/12/11*

EDITORIAL DEPARTMENT  
THE CENTURY MAGAZINE  
UNION SQUARE NEW YORK

April 3, 1911

ROBERT UNDERWOOD JOHNSON,  
EDITOR.  
CLARENCE CLOUGH NEWELL,  
ASSOCIATE EDITOR.

CABLE ADDRESS:  
"CENTURY," NEW YORK

*Do not want to enter the death  
proof controversy publicly  
The idea is that in each  
building within the building*

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Mr. Edison:

*over*

I am very much interested in your concluding remark in your note of the 29th of March, that you think there is a good solution of a method of making buildings death proof. Do you mean to refer to the cement house, or is there something else that you have in mind, and if so is it something you could describe in an Open Letter addressed to the Editor of this magazine? We should certainly be very deeply interested to have your views on this important question.

Awaiting your kind reply,

Sincerely yours,

*R. U. Johnson*

*Dr. Johnson*

*Do you realize that you are neglecting  
a study in not having your portrait painted  
by a first rate artist. You're as bad in this  
respect as the great King of England who has never  
had himself painted. Repeat! repeat! Sir Melbourn would*

There be placed one or more  
vertical circular columns of boiler  
plate steel, lined with fire brick &  
closed at the top with double rotating  
doors to stop all draught  
The column ending in the boiler  
& a chamber leading to a furnace  
also of steel lined with firebrick  
Circular stairs, very small steps  
& <sup>low</sup> ~~low~~ angle, once in this column  
they would be safe for from  $\frac{1}{2}$  to  
1 hour or longer, The columns  
would be supported from the bottom  
I will need not be more than 7 ft  
diameters taking up only  
~~about~~ about 40 square feet  
of building area - ~~the~~ <sup>the</sup> ~~with~~ <sup>with</sup> fire  
brick. This device would be a certainty

*Rec'd Home*



THE NATIONAL MAGAZINE  
BOSTON OFFICE  
EDITED BY JOE H. GIBELL, JR.  
JUNE 20, 1911

*Meaning of  
look at  
Don't be so word  
Tarpin's understand of  
JUN 21 1911*

Mr. Thomas A. Edison,  
East Orange,  
New Jersey.

My dear Mr. Edison:--

Enclosed herewith is rough draft of article which I prepared. Could I ask you to see if there is anything objectionable in it, and could you not have your secretary send on some photographs suitable for illustrating this sketch? Have the cement house but want something more to make the article as attractive as possible. Remember I have no sensitive bumps and any alterations you make will be greatly appreciated.

With cordial best wishes, believe me,

Yours sincerely,

*J. M. C. C. C.*

JMC::F  
(encs)

*Returned June 27/1911*

E. Standenberg

[July 12, 1911]

Beeson

Shouldnt population be a  
factor in your tables, as you compare  
many years together, ~~not~~

~~and~~ <sup>statistics of Totals in</sup> A state of  
Trade affairs which would show  
prosperity for 45 million people  
would if applied to 90 million  
~~people~~  
~~might~~ mean great depression

Edison

*Publish.*

**ECONOMIC ENGINEERS  
BABSON'S STATISTICAL ORGANIZATION**

REGISTERED  
ROGER W. BABSON, Pres.

REPORTS ON FUNDAMENTAL BUSINESS CONDITIONS  
COMPOSITE CIRCULARS OF BOND OFFERINGS

ADDRESS REPLY TO | WELLESLEY HILLS, MASS. July 18/11.  
COMPILING OFFICE | (SUBURB OF BOSTON)

*W. W. W.*  
JUL 20 1911

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Mr. Edison:-

Your suggestions of the 12th received, and of course in our line of normal growth, that is, the line XY on the Composite Plot, the population is considered in the slope of said line. This means that although the high point in the black area on the Barometer scale for December 1909 (namely 70) was apparently higher than the high point in January 1907, yet considering the growth of the country, said high point in December 1909 was not up to January 1907, as the barometer figure should have stood at about 76 instead of 70 to have equal conditions.

I do, however, think it would be well to follow your suggestion and have a table for population on the large desk sheet and if it is possible to make the same up by months we will do so.

I am very glad to hear from you again and I am even now receiving letters about the Saturday Evening Post articles which I wrote concerning you. Sometime when you again feel like talking on financial or economic subjects, I wish you would be good enough to let me know in order that I can come down and get another interview. As both Mrs. Edison and you can trust me implicitly not to discuss religious questions or other personal affairs, I sincerely trust to hear from you within a couple of weeks and receive permission to come down. With kindest regards, I am,

Very truly yours

*Roger W. Babson*  
President.

B.B.P.  
c

P.S. You know the Saturday Evening Post now has nearly three million circulation and there are few people whom it is willing to speak so favorably of as it is of Thomas A. Edison.

Publication, Publication

Oct. 13, 1911

New York City

Thos. A. Edison

must write base  
ball game Saturday, may  
I come Monday morning  
answer

Edward Marshall

yes

Postal Telegraph & Cable Co.

J:R

LETTERS TO  
BOX O  
STATION B

House of Representatives U. S.  
Washington, D. C.

*Now*  
Oct. 16, 1911.

Dear Sir:

We are seeking an expression of opinion from the most eminent scientists, writers and statesmen of America and Europe on the following question: Why is it that Socialism continues to grow by leaps and bounds despite the fact that it has been an intellectual bankrupt ever since Herbert Spencer drew up his unanswered and unanswerable indictment against it? What is your explanation of this paradox? ... In other words what is the alternative to the Socialism now threatening civilisation and how can it be attained? Do you think, with Cairnes, that some form of profit-sharing is that alternative?

Again: our readers would be glad to know your opinion of the attempt to harmonise Socialism with the latest scientific thought? Do you think that Socialism can find any sanction whatever in the principles of Evolution?

What, in your judgment, would be the effect of Socialism upon the interests of literature and art and especially upon the interests of inventors? Can you conceive of an age of great invention, of great literary and artistic achievement, under a regime of Socialism?

It is quite superfluous to add that if you do us the honor to communicate your views, your words will be read with deepest interest in all countries.

Will you also honor us by accepting the various issues of our magazine?

Thanking you in anticipation, we remain,

Faithfully yours,

Prof. Thomas A. Edison,  
West Orange, N. J.

*Basil Bunkill*



[ATTACHMENT/ENCLOSURE]

# The Anti-Socialist

A Monthly Magazine Published at Washington, D. C., U. S. A.

NOW ABIDETH LIBERTY, EQUALITY, FRATERNITY: AND THE GREATEST OF THESE IS LIBERTY

## Our Indictment of Socialism

### SOCIALISM: AN ACT TO AMEND THE ACT OF CREATION

Hon. V. L. Berger, the Socialist Congressman, condemns competition. It appears to be an irreparable calamity that Mr. Berger was not able to be present at the creation. In that case he would probably have saved the Creator from the mistake of building the world on a competitive plan. Compelled to create the world without the aid of the Bergerian wisdom, the Almighty employed the competitive plan, the Socialist plan not being known to the Omnipotent Mind till the recent Milwaukee victory. "Competition is dead," something contradicts thee, Dr. Berger; I am afraid it is Nature.

### Monopoly the Death, Competition, the Life, of Civilization

Socialists very eloquently tell us that private monopoly spells stagnation and social death. But, Dr. Socialist, you do not change your indictment by changing your adjective. All experience declares that you can prove an even stronger case against public monopoly.

### Maxims of the "State," Showing Why It Fails in Commerce

What is everybody's business is nobody's business; therefore public business is notoriously neglected.  
What is everybody's profit is nobody's profit; therefore we need not look to the question of profit.  
What is everybody's loss is nobody's loss; therefore if we lose a few millions, no matter; no one has lost anything.

### Liberty the Very Breath of Progress

The voice of the public may be the voice of God when it is strictly attending to public business, but when the public intermeddles in his private affairs its voice becomes the voice of the devil himself.

We agree with the great teacher who said, "Progress in the political, religious and intellectual evolution of humanity is effected by the substitution of personal decisions for authoritative measures." In other words, individual initiative and private enterprise are the indispensable bases of an advancing civilization.

Civilization will perish unless able men are allowed a free hand.

### The True Formula of Political Freedom

All the great soldiers of Liberty have said that in order to protect the people against the excesses of constituted authority there must be a power higher than government—the unorganized force of public opinion. When Socialists say, "Don't fear the State, but be the State," they betray a portentous simplicity; in assuming that there need be no interest higher than the State they contradict all the wisdom and all the experience of those who have fought and died for Liberty. Erskine truly says, "Other liberties are held under government, but the liberty of opinion keeps governments themselves in due subjection to their duties."

This is the true formula of freedom: Where the people fear the government you have tyranny; where the government fears the people you have liberty.

### Socialism the Sirocco of Civilization

Arthur Young was well inspired when he said: "Give a man the secure possession of a rock and he will turn it into a garden." (This is one of the rocks on which Socialism would inevitably be shattered.) But Young did not tell the whole truth. The whole truth is that the surest way to turn a garden into a desert is to make possession insecure, to substitute public interest for private interest, public property for private property, collective motive for individual motive. Socialism has over and over again taken some of the finest garden spots of the world and turned them into deserts. Individualism makes the desert blossom as the rose. Socialism turns every oasis into a desert. Socialism would prove the sirocco of civilization.

(Over)

# Socialism and Its Reign of Regimentation

UNEQUIVOCALLY CONDEMNED BY THE GREATEST POLITICAL THINKERS

## Jefferson's Indictment of Socialism

The natural progress of things is for liberty to yield and government to gain ground.—Jefferson.

Were we directed from Washington when to sow and when to reap we should soon want bread.—Ib.

I do verily believe that a single consolidated government would become the most corrupt government on the earth.—Ib.

What has destroyed the liberty and the rights of man in every government which has existed under the sun? The generalizing and concentrating all cares and powers into one body, no matter whether of the autocrats of Russia or France, or of the aristocrats of a Venetian Senate.—Ib.

If the employes of all these different enterprises (roads, railways, banks, great joint stock companies, public charities, municipal corporations, and local boards) were appointed and paid by the government and looked to the government for every rise in life, not all the freedom of the press and popular constitution of the legislature would make this or any other country free otherwise than in name.—J. S. Mill.

*The inevitable effect of Socialism would be to sacrifice liberty on the altar of a procrustean conception of equality.*

*In the interest, therefore, of political freedom which it violates and derides; in the interest of commercial freedom which it openly seeks to destroy; in the interest of Art and Genius which it would sterilize; in the interest of the Democratic principles which it contravenes; in the interest of the home which it threatens, Socialism must be destroyed.*

The first number of THE ANTI-SOCIALIST will appear Oct. 1st, 1911. Price, \$1.00 a year; 50 cts. for 6 months, 30 cts. for 3 months. Foreign subscribers may send dollar bills. Clubs of three or more, 70 cts. a year.

GET BUSY AND SEND IN YOUR NAMES AT ONCE. IT IS INDISPENSABLE TO THE SUCCESS OF A NEW PAPER THAT IT SHOULD HAVE A LARGE LIST OF CASH SUBSCRIBERS. This is necessary to secure for it Second-class Rates. He who SUBSCRIBES QUICKLY SUBSCRIBES TWICE. We appeal to our patrons to act promptly and as generously as they can. ADDRESS,

**JOHN BASIL BARNHILL,**

Editor and Publisher of THE ANTI-SOCIALIST.

Box O, Sta. B, Washington, D. C., U. S. A.

## Spencer and Mill Con- demn Socialism

Where everything is done through the bureaucracy, nothing to which the bureaucracy is really adverse can be done at all.—John Stuart Mill.

Socialistic legislation restricts the liberty of the citizen in two ways: First, by lessening that portion of his earnings which he can spend as he pleases, and, secondly, by augmenting that portion taken from him to be spent as public agents please.—Spencer.

Francois Quesnay affirmed three principles which are at the base of all modern economic and social sciences: (1) Personal property and freedom in the use of that property. (2) The necessity of the most thorough competition. (3) The necessity of establishing legislation in accord with natural laws, public authority having for its object not the limitation but the guarantee of the freedom of the individuals. According to Quesnay, the security of property is the foundation of the economic order, indispensable as an incitement to work and the employment of wealth of agriculture, and industry.

*Publ'd*  
L. P. ALFORD  
EDITOR  
E. A. SUVERKROOP  
F. H. COLVIN  
E. VIALI  
J. D. MOONEY  
ASSOCIATE EDITORS  
F. A. STANLEY  
CINCINNATI

# American Machinist

PUBLISHED WEEKLY AT 505 PEARL STREET  
NEW YORK

JOHN A. HILL  
PRESIDENT  
MORON BRITTON  
MANAGER  
F. A. HALEY  
EDITOR EMERITUS

Mr. Thomas A. Edison,  
West Orange,  
N. J.

*Coming  
time*

October  
17,  
1911.

*Answered  
by telephone  
10/20/11*

*Oct 17 1911*

Dear Sir:-

A short time ago the New York World published an alleged interview with you in regard to German machine shops. The manager of the German edition of the AMERICAN MACHINIST writes me that this article has created a great stir over there and has offended many machine shop proprietors.

Knowing as I do that our daily press frequently distort facts and have often misquoted you in the past, I assume that the same thing may have happened again. Will you not permit me to call upon you, discuss this matter of German machine shops, and prepare an article based on this interview which will accurately convey your opinions of German machine shops and of the German machine building industry. Such an article in our columns will have a very wide circulation in Germany and will reach the very men who have taken offense at the article in the World.

I should be very glad to meet your convenience in regard to the time for the interview.

Very truly yours,  
*L. P. Alford.*  
Editor.

(D)

The Anzeiger is the  
**ONLY DAILY NEWSPAPER**  
Published in the German Language  
South of the Ohio, is  
THE OFFICIAL ADVERTISING MEDIUM  
of the city of Louisville,  
And has a wide circulation throughout the  
States of Kentucky, Indiana, Tennessee,  
Alabama, Georgia, Mississippi,  
Arkansas and Louisiana.

OFFICE OF

LOUISVILLE ANZEIGER.

INCORPORATED.  
321 WEST GREEN STREET, Louisville, Ky.

Louisville, Ky., Oct. 18th 1911 191

Mr. THOMAS A. Edison,

New York,

Dear Sir:-

Enclosed herewith I beg to hand you a clipping taken from the Lokal-Anzeiger, a newspaper of wide circulation published in the City of Berlin, Germany. It repeats the story of your making defamatory remarks concerning Germany, remarks which of course you have not made. I have concluded to set this matter at rest so far as the German press is concerned by writing for publication in the well-known magazine "Gartenlaube" an article dealing with this subject. The Gartenlaube, published at Leipzig, circulates throughout Germany and stands high in the estimation of the people. For the purpose of doing this effectively I beg to request of you to address me a few lines denying the slurring remarks attributed to you by unprincipled writers. This letter I desire to make the basis for my article and I want to reproduce it in facsimile along with it. All of the German papers so far received by me are repeating the story and the high regard in which I hold you and of whom all Americans have reason to be proud prompts me to make an effort to put a stop to these wicked stories. Your kindness will be appreciated.

Very respectfully

Chas. Neumeier  
Managing Editor Louisville Anzeiger

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 Alabama, Georgia, Mississippi,  
 Arkansas and Louisiana.

OFFICE OF  
**LOUISVILLE ANZEIGER.**

INCORPORATED.  
 221 WEST GREEN STREET, Louisville, Ky.

Louisville, Ky., Sat. 10th 1911 191

Mr. Thomas K. Edison,

NEW YORK.

Dear Sir:-

*Manuscript*  
 There will be an article  
 in Scientific American also  
 in American Merchant

On yesterday I mailed you a letter containing a full copy  
 of a Berlin paper regarding derogatory remarks made by you  
 you by the New York World. At the same time I requested you to  
 a few lines disavowing such untrue statements. These lines to be used  
 by me in getting the matter for the world's German speaking people  
 for the purpose of emphasizing the absurdity of the charges by you  
 which could be construed as defamatory. I have sent you a  
 clipping from the Lokal-Anzeiger of Louisville containing a letter addressed  
 to the Editor of that paper dealing with this subject. The letter  
 is written by your daughter and she is an able subject with considerable  
 skill, with clearness and precision. The sensational remarks of some of  
 the American and German newspapers concerning your attitude towards  
 Edison could not possibly be more effectively refuted than is here done  
 by your daughter's gifted daughter. I shall certainly reproduce this letter  
 in my paper here. However, it shall not deter me from doing what I intend  
 to do.

*When they come out  
 send copies to this  
 man - you already  
 have sent them  
 article*

Very respectfully  
 Chas. Neumeier  
 Managing Editor Louisville Anzeiger

[ATTACHMENT/ENCLOSURE]

*H. F. Miller*  
*Labaraky*

TRANSLATION FROM GERMAN NEWSPAPER

EDISON'S DAUGHTER ON HER FATHER.

Supplementing our communications with regard to the statements of Edison in the New York World, we have received from the daughter of the inventor, ~~per~~ ~~mauser~~ I.E. the following note:

Messrs Editors:

Whoever has known my father, Mr. Thomas A Edison, for more than thirty years, as I have, knows very well that it is absolutely impossible that he should have made the statements, which are now appearing in German newspapers. He had much too much tact and kindness of heart and with his superior sentiment and recognized wisdom could never show such unthankfulness towards a land that has honored him so greatly and evinced such hospitality. As I accompanied him on almost the entire trip, as far as Dresden, I had constant opportunity, twice daily, to sit next to him at table, so that but little escaped me of what he said with regard to the land and its people. As by my marriage I have become a German, it was naturally especially interesting to me to learn what impressions my father received of Germany, and scarcely had we crossed the boundary of Germany when I began to pour innumerable questions upon him, so that I appeared to myself to be an almost tireless reporter. I must confess to having felt a feeling of happiness and satisfaction, when he so frequently praised my new fatherland and openly showed that he was completely charmed with the activity, the business industry and the order that prevailed in the land. As he never expressed to us, his family, censure upon the conditions here, it is entirely out of the question that he has given such an interview to a stranger, a reporter, an account of which he would know, would appear in every newspaper. How incorrect his alleged utterance as to German machines is would appear from the following fact. Upon our separation at Dresden, he presented me with a new automobile and further declared that I should choose from among the good German machines, since the American machines were not as good. As a token of his extraordinary tactfulness I might further mention that,

[ATTACHMENT/ENCLOSURE]

on our trip, we passed through a country where women, almost exclusively, were performing the heavier field work. My father was greatly excited about it and often gave expression to his discontent and spoke in sharp censure of it, to us, his own people. In the presence of reporters, however, he never let a word fall about even this point, which I can with surety confirm, since I almost always acted as interpreter between him and gentlemen who did not speak English. He was always exceedingly careful in his replies, so that frequently I had to advise the reporters that he could give no answer to this and that question, as he had not yet sufficiently considered the point in question. In fact he wished absolutely to avoid what might hurt.

Finally, I must somewhat ease my feelings: I love the reporters, especially the Americans, very much. By their grace, I became at the age of four, a prodigy, at six years I spoke four languages, at eighteen, when I became engaged, a picture of me appeared in several New York papers, so beautiful that I was completely delighted. Unfortunately it did not resemble me in the least. Their attachment and faithfulness is skyhigh above that of my best friend, so that I might cry out, with a groan, "Dieu nous garde de nos amis" (God preserve us from our friends) Their devotion to duty and delight in work I had frequently opportunity to admire, on our journey, especially when it was possible for such gentlemen to send a column long telegram to their papers in America, after the day had passed entirely without incident and we had done nothing but travel 8 hours in an auto, take our meals in our private rooms and retire to bed in due season. Much indeed may be explained in this way.

Marion Estelle Oeser, nee Edison.

*Ed. Tug*

October 25th, 1911

Mr. Charles Neumeyer,  
Managing Editor,  
Louisville Anzeiger,  
321 West Green Street,  
Louisville, Ky.

Dear Sir:-

Your favor of the 18th inst. was received,  
together with the clipping from the "Lokal-Anzeiger".

It has been a source of great regret to me  
that I have been misquoted in certain newspaper articles  
published a few weeks ago. I certainly did not make some  
of the remarks that were attributed to me, and can only  
account for their appearance by reason of some misunderstanding  
on the part of reporters as to what I really did say.

The Germans as a nation and as an individual  
have held a high place in my estimation for many years, and  
this favorable opinion was greatly strengthened on my recent  
visit abroad. If you will kindly read the enclosed interview  
in the New York Times of October 22nd, you will learn my real  
views as to Germany, her people and their enterprise. I am  
sure this ought to set the matter at rest in the minds of  
Germans here and everywhere in the world.

Yours very truly,

*Also mailed him  
copy Sci. am. of Nov 18/11*



225 Fifth Av., New York.

Oct. 28, 1911.

*Pub*  
*Ans 11/1/11*  
Mr. Thomas A. Edison,  
West Orange, N. J.

*Will be pleased to receive a copy of  
the work when printed - if you want  
points for this kind of long drop eye*

Dear Mr. Edison,

I am enclosing the article for the "Century  
Magazine" which I have written as a result of the interview you  
so kindly gave me last Wednesday, and which you asked to read  
over first, before it is printed. I hope it meets with your  
approval, as I have endeavored to make it *some time* *Edison*


Perhaps you remember we spoke of detective stories. I  
am enclosing a copy of one which appeared in the Connopopolitan  
for November. I have been running those "Craig Kennedy" stories for  
over a year now. In this one I have used the oxyacetylene blow-pipe.  
If it interests you at all I shall be glad to send you a copy of  
my book of "scientific" detective stories which Dodd, Mead will  
issue shortly.

Thanking you again for your kindness, I am,

Very sincerely yours,

*Arthur D. Reave.*

**POSTAL TELEGRAPH-CABLE COMPANY**



## NIGHT LETTERGRAM

The Postal Telegraph-Cable Company (Incorporated) transmits and delivers this night lettergram subject to the terms and conditions printed on the back of this blank.

CLARENCE H. MACKAY, President.

RECEIVED AT  
Tel. 208  
208 Main St., Orange, N. J.

DELIVERY NO.

INDEPENDENT    COMPETITIVE    PROGRESSIVE

4-127

F 41 T1 46 NL " N "

NY New York Nov 1-11

Mr Thomas Edison

Orange NJ

*I am overworked, they better wait  
for next ~~Saturday~~ number, aint  
I talking too much already*

Munseys magazine wants an interview on what is the matter with  
America ?. Wants matter entirely separate from that used in Times  
story. Do you care to do this within the next four days. Please wire  
answer collect my house.

Edward Marshall

446 West 23 St

*Ans: 9/11  
NOT in Postal  
have called*

# "Good-By, Bill, and Good Luck!"

(Continued from page 492.)

snow-clad mountain that rises almost midway between Seattle and Tacoma by the name that the Tacoma folk insist upon—Mount Tacoma. When he got to Seattle, he referred to the same impressive mount as Mount Rainier. William Jennings Bryan, on a recent tour of the far West, got gracefully around the rivalry between Tacoma and Seattle as to the name and proprietorship of Mount Rainier.

"When I was in Seattle," he said to a Tacoma audience, "they showed me their beautiful mountain. Now that I am here, you show me your beautiful mountain. And I want to say to you that your mountain is every bit as beautiful if not more beautiful than their mountain."

(Wild and long-continued applause and cheering.)

Mount Rainier or Mount Tacoma (take your choice, kind readers, for you will want to visit both Tacoma and Seattle some day and you will like both cities immensely) furnished one of the most exciting days of the President's tour and demonstrated the later-day usefulness, utility and resourcefulness of the modern automobile. President Taft and his entire party, with an escort of Tacoma people, were taken six thousand feet up the mountain to the foot of the glacier fields and to the lower reaches of the line of perpetual snow. It was rather late in the season for mountain climbing, the mountain rains having set in and the trails in the higher levels being in anything but the best condition. It required fourteen big cars to carry the party. At one place, near the end of the climb, the road became a perfect quagmire. The first two or three cars got over safely, but they cut such deep ruts that the following machines sank down below their hubs and axles in the deep going. It was necessary to pull one or two out with horses which had been provided for emergency by the Forest Rangers, but most of the cars

plowed through triumphantly under their own power.

Descent from the mountain was delayed until after nightfall. Searchlights then were brought into play, and it was, indeed, a picturesque procession that headed down the steep and winding roadway. At times the cars ran within eighteen inches of precipices where the drop sometimes ranged from one thousand to twelve hundred feet. The turns were exceedingly narrow in places, for the President had been taken far above the ordinary objective point of the tourist and the road had been planned for light-wagon traffic only. In a way it was an extremely hazardous trip. Everything was safe enough, provided nothing happened. The people of Tacoma, in giving this unique experience to the chief magistrates of the nation, pinned their faith to the modern automobile, and the results showed that they were not misguided. There was no mishap of any sort. Steering gears held true, tires were on their good behavior, and in every sense of the word the American-made machines proved their sturdiness and reliability.

President Taft enjoyed the trip hugely and laughed heartily at the nervousness displayed by some members of his party. There was much speculation as to what would happen if one of the machines should plunge over the cliffs, but all nervousness was allayed when Wendell Minchler, of the White House staff, offered to wager "a great big dinner" that "at least" it would knock out all four axles—which was some wager for Wendell, who knows a good dinner when he sees it.

Mr. Taft never feels more at home than when comfortably settled down in the tonneau of a big touring car, with a motorist cap pulled well down over his eyes. The chauffeur then can "slip it in the high," and Mr. Taft will never tell him to slacken the pace. Some of the President's friends have been apprehensive because of his love for speed,

but he has the utmost faith in his machine and never bothers his head about accidents. It is estimated that the President will make at least two thousand miles by automobile during this trip.

One of the striking evidences of the growing use of the automobile is the wonderful increase in country clubs throughout the country. Visits to and breakfasts at country clubs have been a feature of the President's trip. And country-club chicken has been the invariable *piece de resistance* of the early morning meals. Two years ago, on his first swing through the country, Mr. Taft was not invited to more than three or four country clubs. The growth of the clubs has been so great in the meantime that Mr. Taft has scarcely visited a city that did not boast a pretty little club house and fine golf links. Mr. Taft has not had time to think much about golf on this swing, much less to play any. But the growth in popularity of the game has impressed him wonderfully.

As commander-in-chief of the army of the United States, President Taft has put his trip to good use in visiting the various army posts along the route of the itinerary mapped out in Washington. The presidential army flag, bearing the great seal of the United States on a field of red, has been carried along, and wherever the regular troops have met the President with an escort, the flag has followed his automobile. Mr. Taft has reviewed many thousands of soldiers on his tour. He has a peculiar interest in the army, having been thrown in close contact with it in the Philippines and as Secretary of War.

"I knew you in the Philippines, Mr. President," has been a common greeting to Mr. Taft from army officers all over the country.

"Well, I'm mighty glad to see you again," smiles back the President, with a little firmer grip to his hand.

No shadow of the President's trip of 1911 would be complete without a ref-

erence to Freeman Johnson. Freeman was the Pullman porter assigned to the newspaper men's car. He belongs to the old school of porters, with many of the ancient negro superstitions deeply imbedded in his make-up, despite a long residence in effete Boston. Freeman knows every railroad spiko by its first name on the road from Boston to Chicago, but he had never before been west of the second city in the land. The newspaper men, many of them tender-foot themselves, were quick to get Freeman excited over stories of the wild and woolly West, and by the time the train got to Omaha Freeman was locking the doors to keep the Indians out. When the train got to Portatello, Ida., a home of the Blackfoot Indians, Freeman really did see some of the red men.

"I started to get off de train jes a minute ago," he explained, "but two of them old fellows looked at me so hard I come right on in again."

Freeman said he had heard that if an Indian "ever drew a bead on you," he'd shoot you right in "the ball of the eye with a bow and arrow." He had also heard that when they held a train up in the West they always shot the Pullman porter first, so he wouldn't sleep a wink at night unless some one was on guard.

"Ias scared all right," Freeman openly said, "but I know you gun men gots to look out for me. If dey gets after me too hard, I'm goin' into Pres'dent Taft's car, and dey can't git me in there, for dat's the United States."

Freeman nearly collapsed when they told him one day that Mr. Taft and the newspaper men were going down into Mexico, where there were sure-enough bad men, before the trip was ended.

"You wouldn't take a sick man, would you?" asked Freeman pathetically. "Cause—cause I'm gettin' to feel kind of queer already."

Freeman heaved a sigh of relief when the train again headed for the East and he was told he would soon be back in "that dear old Boston."

[CONTINUED ON NEXT FRAME]

# The Public Forum

## MILKING THE PUBLIC COV.

James J. Hill.

**E**XAMINE political nostrums now most talked of as inventors of society, humane in intent though many of them be, and it will be found that they all involve continued expenditures of large sums of money to be collected by taxation. The men who pay these taxes are the holders of property. The men who vote these expenditures are the taxpayers plus that considerably more numerous body of electors who either pay no taxes or a share so inconsiderable that its increase or decrease is not felt. Hence a continually increasing disposition in the nation and the States to change the distribution of wealth by legislation; taking it by enormous appropriations from those who have accumulated it and scattering it among those who did not. The end of such a system may be delayed, but it is not doubtful. Capital is exhausted and is not renewed. The motive vanishes. The public is educated to refuse work, to spend lavishly, to look to the State as the cow that can keep everybody supplied until all the milk be may want indefinitely. Labor suffers in the end.

## ADVANTAGES OF TRUSTS.

Thomas A. Edison.

**T**HE German government permits the formation of price pools that practically amount to trusts. Under this system, to which there is so much opposition here, every one is busy and the whole country is prosperous. There is a screw loose in our reasoning about trusts. The advantages of trusts are very great. Take the Standard Oil Company, for example. Put all the small companies back into the state in which they were when they were bought up, and what would you have? Fifty-seven different office forces. Not all of the companies could get to hire highly organized brains to run them, but they would have to take inferior men. The prices of all would go up, and the same is true of any other class of goods under similar conditions. As far as controlling the trusts is concerned, we could

have the same laws as they have in Germany or France to prevent evils. Let the big businesses combine in all the ways they want; push the money out and build factories and railroads. When the captains of industry make money, every one else does.

## FANCY CONSERVATION NEEDED.

Rational Secretary of the Interior Billings.

**C**ONSERVATION in the hands of rational minds, as applied to all national interests as well as State and domestic, has its commendable force and demands the best use of all of our natural resources, and when Congress can get its head above the foam of the confused waters we may be able to have some constructive legislation that will silence the agitator and the fanatic and permit the country to go on with safe and legitimate development. There is nothing gained in undertaking to save our natural resources for posterity unless we at the same time preserve our institutions so that posterity can enjoy them in the light of republican liberty. The movement to draw the Federal government into the business of operating and developing the public domain through national agencies and maintaining a system of national landlordism is antipathetic to the fundamental law and is in conflict with the expressed opinion of the Supreme Court.

## THE PREPARED MAN'S AGE.

Frederic Boston, University of Vermont.

**O**NE OF the greatest crimes of modern times is that of educational infanticide. Physiologically and intellectually man is an infant, or at any rate should be, until the age of twenty-five. A prolonged infancy means a prolonged and more effective maturity. These "old fathers" who wrote the Constitution were for the most part under fifty years of age, but the men who are most highly revered and who are our leaders in the councils of thought to-day are those who have passed in years the threescore mark. We have now a pra-

mid which has heightened itself by fifteen years since the beginning of the last century. The apex, instead of marking the age limit of efficiency at fifty years, now reaches up and records it at sixty-five years. We often hear it said that this is the age of the young man. The assertion is false. This is not the age of the young man. It is the age of the prepared man.

## WHITHER ARE WE DRIFTING?

Hon. William H. Hoelshelm, State Superintendent of Insurance.

**W**HITHER are we of a great republic drifting? Labor glowers and threatens industrial war. Big business shaken with ague. Capital is dissatisfied. Prosperity is checked. The people call loudly for retributory law against manager and magnate. Strong-arm methods toward great corporations are in full operation in nation and in State. Commercially speaking, our times are out of joint—like our politics. The people's legislators long since lost the people's confidence. Their executives must now exceed the written law or lose in power and usefulness. Their judges even are threatened with recall. Furies once potent are going to piece as the voters rightfully gain the power to nominate their public servants.

## LOAFERS AT COLLEGE.

Francis Smith, University of Pennsylvania.

**N**O LOAFERS should be permitted to come to college. Too many come just for the social life and athletics or because their fathers are members of the alumni or because their mothers realize the advantage socially of a college degree. The loafer's regard for nothing but the athletic side of college life is injuring everybody. Hundreds of young men are ruined annually by four years of dallying at college. These loafers write home and tell their parents how they are working and then manage to slip through and graduate. But the dallying habits formed in college cling to them and they dally through life and accomplish little.

## MAKING AN HONEST \$1,000,000.

Louis M. Shaw.

**A** MAN can make \$1,000,000 and make it honestly if he has courage and aptitude. Those who try to make \$1,000,000 dishonestly and fail think that nobody can make it honestly. Mark Hanna once told me that he had occasion to call on Phil Armour. He found Armour sitting in a chair and being shaved, watching his lunch and dictating to his stenographer. It may not be necessary for you to work as hard as that, but that is the price that Phil Armour paid to have his name written in high places in every nation on the globe, and you can be sure that there are no bargain counters for such goods. Baseball is absorbing more interest among the boys of the country than is business.

## THE BEST CONSERVATIONIST.

Vice-President Sherman.

**H**IS the best conservationist who utilizes the forces of the air and all the hidden forces of the earth for the advancement of mankind, and turns those forces into comforts and conveniences and makes them supply necessities and in other ways lighten the burdens of this generation. I believe that such new generation is equal to the task of discovering some new thing to take the place of any exhausted natural resources. I am willing to give the coming generation credit for being as smart as we are. I believe that they will find fuel. It may be that they will invent appliances to squeeze out of the air the thing that will light and heat the homes.

## THE RIGHT SOCIALISM.

Rev. R. H. Hudson, *Chattelware Type, Freedmen.*

**T**HERE is a socialism which defies God, ignores the Bible, trifles with family ties and sacrifices the individual to society. Such socialism can receive no quarter from the Christian. But this type is passing away. The leading socialists of to-day are Christian in spirit and purpose. Christian socialism demands a change in modern conditions, which are nothing less than a scandal to civilization.

I can particularly classify  
account it been a long time of great  
in a theater or during today  
this advantage to my <sup>completing</sup>  
as they business  
if possible, only I find  
and only I find  
and only I find

My dear Mr. Edison, <sup>Chief</sup>  
New York City,  
Nov. 30<sup>th</sup> 1911,

Many remarks you made  
known to the correspond-  
ent of the N. Y. Times  
concerning your travels  
in Europe last summer,  
were of tremendous  
interest and instruction.  
I felt that I knew as  
much of the places you  
visited as you do, and  
that I should not go  
abroad to review my  
supposed knowledge.  
I always read a thing  
when you are mentioned  
in it. I am interested  
in everything about you.  
I am totally deaf and

53

(3.)

In the first section of my article I state that you are quoted as saying you would prefer deafness to hearing for the reason already stated. I like the truth and hope you will explain things so that there will be no mistake.

I am a post-graduate of this school. Hoping you will answer me in due time or as soon as possible -

Sincerely yours,  
Stanley Robinson,

Address: - D+D Insty,  
Station M,  
New York City.

(2.)

totally blind too. Now and then I write something for a newspaper in order to make a little money. I have just finished an article on sound perception and deafness. There is a question I want to ask you before I finish the conclusion. The question is this - Mr Edison if it will not inconvenience you kindly answer the following question - Is it true that you are deaf? Is it also true that you have often wished yourself deaf because you could give your work better attention when afflicted so?

*Public*  
OTTO KOCHIG, PRESIDENT AND TREASURER.

GEO. H. SANDISON, VICE-PRESIDENT.

THEODORE WATERS, SECRETARY.

## THE CHRISTIAN HERALD

BIBLE HOUSE NEW YORK CITY

November 20, 1911.

Mr. Thomas A. Edison,  
Orange, New Jersey.

Dear Mr. Edison:

Sometime ago I wrote you asking for an interview, which your secretary stated you would be kind enough to grant.

I would much appreciate an appointment sometime next week most convenient to you, when I could call upon you for a short talk upon a subject which I am quite sure will be interesting to you. Your secretary wrote that you will be glad to see me at any time, but knowing how busy you are, I would rather come at your convenience. If you are too busy this week, then the week following will do.

Yours sincerely,

*Theodore Waters*  
K.

T.W.-G.R.

*say cannot make an appointment  
just ask on telephone if I  
will be out Sat &  
then come over  
anytime*

*NOV 23 1911  
Ans 11/23*

Pub

# Manufacturers Record

Richard H. Edwards,  
Editor and General Manager

Baltimore, 11/25/11.

Mr. Thos. A. Edison,  
Orange, N. J.  
My dear Mr. Edison:-

Ans 11/29

I will give an interview  
any time on the subject  
your name —

Talking last evening with Mr. Geo. W.

Perkins he referred to some very interesting statements you had made to him lately about the great prosperity in Germany and the progress of the industrial interests of that country as you saw the situation. I said to Mr. Perkins that I thought that it would do our country great good if you would give me for publication in the shape of an interview or special article, an elaboration of these points. I should greatly appreciate being favored in this way. I think such an article as this would command the widest attention and awaken our own people to a realization of the fact of how too much radical legislation has halted our industrial development, while Germany and for that matter other iron-making countries are enjoying great prosperity.

Hoping that this may have your favorable consideration, I am,

Very truly yours,

Richard H. Edwards  
Editor.



Advertising is a constant reminder

# CARRIAGE AND WAGON BUILDER AND AMERICAN VEHICLE

W. W. WOOD  
W. S. SCHERMERHORN  
**WOOD & SCHERMERHORN, PUBLISHERS**  
337 WALNUT STREET

A MONTHLY JOURNAL DEVOTED TO THE INTERESTS  
OF BUILDERS OF CARRIAGES, WAGONS, TRUCKS,  
AUTO WAGONS, HIGH WHEEL MOTOR BUGGIES AND  
THEIR ALLIED ACCESSORIES; MACHINERY AND TOOLS.  
ALSO DEALERS.

PHILADELPHIA, November 27, 1911.

Mr. Thomas A. Edison,  
130 Lakeside Ave.,  
Orange, N. J.

*See world-class here  
every time  
NOV 28  
Quality*

Dear Sir:-

We are in receipt this morning of your article for our Christmas number, on "Electric Delivery Wagons". It is a very interesting and practical article which will be read with interest by the trade.

We highly appreciate your courtesy and we are glad to have you with us. The writer believes that your electric application could be applied to light buggies, to the great profit of the manufacturers and great benefit of users.

I expect to be in Newark next week and would like very much to have a personal interview with you on this subject, as I have given it considerable thought, and have for years been in close touch with the largest manufacturers of buggies in the Country. I will first apply to your Mr. Bell, and if you will kindly instruct him to grant me an audience I will greatly appreciate it.

Trusting that you have an abundance to be thankful for this week, and that your Christmas stocking will be full to over flowing, I am,

Yours respectfully,

WOOD & SCHERMERHORN,

Dict. W.W.W./M.

By *W.W.Wood*

### Pithy Pointers on Publicity for Profitable Personal

Stopping an ad. to save money is like stopping a clock to save time.

If all thought alike, there would be no more trading or advertising.

The time to advertise is all the time. The man who takes longest has the largest basket of fish.

Advertising is an insurance policy against forgetfulness. It compels people to think of you.

What makes Spauldo's household wares? Continuous advertising. You are never allowed to forget it.

The unprofitableness of advertising is not in doing too much of it—it is in not doing it correctly.

Like eating, advertising should be continuous. When today's booklet will answer for tomorrow's you advertise on the same principle.

If advertising is not a profitable investment WHY do so many successful houses in all lines of trade have continuously at it? Why "TRY" in error or are YOU?

Advertising does three things—  
—Informs the public WHO you are—WHETHER you agree and what you have to SELL; this strengthening your correspondence and locking your salesmen.

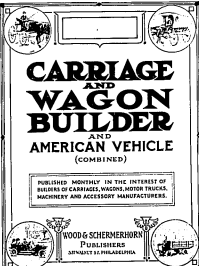
Advertising is the silent drummer that tells the public what the business man wants. It is how about the goods he has for sale—an invitation of advertising into the veins of trade gives the business heart.

No one has the means of thinking of your business, out of print out of mind. The business candidates are well advertised every day. And your neighbor who ran with Bryan the last time—the one of ten will say they have forgotten and the other five will think long before they correctly answer.

THE CARRIAGE AND WAGON BUILDER describes most desirable models and where to buy them. It is working for you while you sleep and while you sleep and circulate to the thousands of the best paid carriage, wagon and automobile manufacturers in the United States. We also reach many of the highest rate vehicle dealers.

[ATTACHMENT/ENCLOSURE]

*Print*  
PRINTED TO BE READ



**CARRIAGE  
AND  
WAGON  
BUILDER  
AND  
AMERICAN VEHICLE  
(COMBINED)**

PUBLISHED MONTHLY IN THE INTEREST OF  
BUILDERS OF CARRIAGES, WAGONS, MOTOR TRUCKS,  
MACHINERY AND ACCESSORY MANUFACTURERS.

**WOOD & SCHERMERHORN**  
PUBLISHERS  
DEPARTMENT 25, PHILADELPHIA

*Pier*  
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TÉLÉPHONE 1 3008

—  
SERVISE DES MÉRIDIENS 1  
84, AVENUE DU HAINE  
TÉLÉPHONE 1 14-15

—  
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11, BOULEVARD DES ITALIENS  
TÉLÉPHONE 1 1045, 2048

PARIS

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M. PIERRE LAFITTE & O<sup>e</sup>  
SERVISE DE LA LIBRAIRIE

DICTÉE PAR  
30

*Paris, le 1<sup>er</sup> Janvier 1911.*  
*Aut 7/19*  
*Micrograph*  
*tell him about*  
*the Book*  
*2 vol books*  
*Dr. J. Owen*

Sir,  
A new edition "La Collection des Hommes Illustres" is on the point of being published by the Librairie Lafitte, where the most important magazines are edited. The direction thereof has been entrusted to me. I have decided th at the first volume shall be devoted to the universally admitted Edison. The next volumes of this first serie will treat of Wagner, Pasteur, Hugo, Dickens, Washington, etc...

I trust that our decision won't displease you and reckon upon your affection for our Country to come to our aid. I would be most obliged and thankful if you could let me have any sort of document concerning your discoveries and yourself. Photographs also would be of the greatest of use; for, as you know, here in France no book has been yet edited on your works though of course numerous articles have run on you. Your help would enable us to expose to the French people a new book interesting by the novelty of details and reproduction of photographs it will contain.

Would it be too much to ask you to give an answer to the following question: in which is actually

your greatest concern and how do you view  
humanity's future?)), and to be so kind as  
to give us a special autograph?

As our first volume must be called *Edison*,  
we should be most obliged if you could  
let us have as soon as possible all the  
documents we hope to obtain

Please believe me one of your most  
ferent and respectful admirers,

A. KEIM,

Docteur en Philosophie de l'Université de Paris

24 Place des Batignolles, Paris (XVII<sup>e</sup>)

France

Label Col Tabo. 1950-1951

# Manufacturers Record

*Richard M. Edwards,*  
Editor and General Manager

Baltimore 22/2/11.

Mr. H. F. Miller,  
Secretary to Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Referring to telephone conversation a moment ago,  
it will afford me pleasure to call on Mr. Edison at four  
o'clock Tuesday afternoon, this being the hour I understood  
you to name.

Very truly yours,

*Richard M. Edwards*  
Editor.

# Manufacturers Record

*Richard H. Edwards,*  
Editor and General Manager

Baltimore, Dec. 7/11.

DEC 8 11

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Referring to my telegram of last night: I enclose a re-written interview based on our talk of Tuesday afternoon. In order to round out the interview I have put into it some things which would seem to follow as a corollary of the things that you said.

I will much appreciate it if you will revise this article, add to or subtract from, as you may desire. There are two or three points, as indicated, which I hope you will feel inclined to elaborate.

I shall greatly appreciate it if I can receive the corrected manuscript by Friday evening or Saturday morning. I enclose special delivery stamp for return.

Very truly yours,

*Richard H. Edwards*  
Editor.

Dec. 8th, 1911

Mr. Richard H. Edmonds,  
Editor, Manufacturers Record,  
Baltimore, Md.

Dear Sir:-

Your favor of the 8th instant, with rewritten interview, has been received. I am sorry that this matter was not done in the regular way and more time allowed, for I cannot go over this interview to-day as my time is so fully occupied with many matters, and I shall be busy all afternoon with 100 visiting members of the American Society of Mechanical Engineers who are coming to the Laboratory

The article which I mailed to you last night was read by me and a few trifling corrections made. It was all right, but I have not had time to read the one which is now returned to you herewith. The only thing I have done is to answer your questions on pages 4 and 5.

Yours very truly,

TAE/RS

[ATTACHMENT/ENCLOSURE]

Mr. Edison,

Your plan seeks the protection of the producer. How would you prevent the producers, in this co-operative system, from combining to advance prices to such a figure as to injure the consumer? What have you to suggest as a protection to the consumer while protecting the producer?

Make this a foot note  
(I cannot very well give you much of what I am working on - you'd better try out your idea) <sup>to this</sup>

They are permitted to form associations & make contracts, agreeing ~~not~~ <sup>with</sup> each other not to sell below the cost of production, including <sup>depreciation</sup> on plant and the legal rate of interest on the investment & the average costs to be determined by two firms of public accountants acting separately, & the mean <sup>mean</sup> of such average costs & investment to be the cost below which no member can sell - All these findings & contracts of each association to be filed in some legal bureau to make them legal & every period of 3, 4 or 5 years new determinations to be made so as to give <sup>the</sup> public <sup>the</sup> benefit of improvements in prices & quality X



[ATTACHMENT/ENCLOSURE]

-5-

Mr. Edison,

*Will you kindly* please give some details about the working of the ~~x~~ contract of the gas and coke company of London to which you referred.

*It was years ago that I knew of this ~~contract~~ I am going to send to England for a copy of the contract*



TELEPHONE 447 HOLBORN.

TELEGRAMS "VATICAN, LONDON."

## The Review of Reviews.

Edited by W. T. STERND.

Bank Buildings,  
King'sway,  
London, W.C.

Dec 18th. 1911

Thomas A. Edison, Esq.,  
West Orange,  
New Jersey

*Received*

DEC 18 1911

Dear Sir,

In the Christmas number of the "Strand Magazine" your name has been selected as one of the ten greatest men now living. I am conducting an inquiry, which was suggested by Mr Andrew Carnegie, as to who are the twenty greatest men who have ever lived. It would be interesting to know who, in the estimation of the greatest men now living, are the greatest men who have ever lived. Might I ask you, if you can spare a moment of time, to be good enough to fill in the enclosed list and return it to me?

I have the honour to be,

Your obedient servant,

*W Sternd*

[ATTACHMENT/ENCLOSURE]

## My Twenty "Greatest Men."

I was ticked by my friend Carnegie's "List of Twenty Greatest Men," and it set me thinking on the principles whereon such a reasonable list should be framed. Not being myself a Scoto-American iron-master, and having some interest in ancient history and literature, I am not satisfied with a selection which has no name older than Gutenberg and Columbus, and includes three names that I never heard of. I hope that Homer, Aristotle, Charlemagne, and Dante are not excluded from the Carnegie Libraries. And if we once begin to insert the authors of modern mechanical inventions, where shall we stop? and where do automobiles and aeroplanes come in, or Marconigrams and kinematographs, say, even fountain pens, gramophones, antipon, and pink pills—and all the damnable dodges invented to make us all go faster, work harder, and worry each other worse than man was ever worried before?

We must start with Moses, Homer, Aristotle, and Archimedes, *i.e.*, the obvious types of early priestly civilisation, ancient poetry, ancient philosophy, science, logic, and societary geometry, and mechanics. The effect of these four founders lives and works still. From the point of view of European civilisation, Moses is the natural representative of theocratic societies. Even if Lord Rosebery and Mr. Gosse were to succeed in burning the Pentateuch, copies would still turn up, and no one can deny that the ideas and the races represented in the Old Testament are not quite obsolete. Nor is Homer obsolete—or why all this pother at Oxford about Greek? If Ruskin and some clergymen prefer Plato to Aristotle, men of a scientific and general culture still honour Aristotle as "the master of those who know," as Dante hails him. No trained mind doubts how indispensable to all scientific progress was Greek geometry, or that Archimedes was its most astounding genius.

The most creative spirit of the ancient world, the founder of the mighty Empire of Rome, out of which all medieval civilisation rose, was Julius Caesar; and so Charles the Great was the primeval founder of modern Europe. As Jesus Christ is obviously *Agere cunctorum*, St. Paul is the true founder of Christianity as a *religio*. And as truly Dante is the founder of European literature. Why Mr. Carnegie ignores the

Gospel, and prefers Burns to Dante and Milton, we cannot understand. The next two names, Gutenberg and Shakespeare, are in his list, and, of course, in everybody else's list.

Here are ten names (half the whole), and I challenge any competent historian to show that they must not be counted in the twenty "greatest." You may say, Why, these are Comte's "Saints!" Yes! they are the first ten naves in the Positivist Calendar. Does anyone suppose that I am going to talk about great men without reference to our "Calendar of 558 Worthies," on which I spent some good years of my life? But Comte's list was drawn up seventy or eighty years ago, and was expressly designed "for the nineteenth century" alone. I am not at all a slave to it, and it obviously cannot serve for the future. So I have no hesitation in using my free judgment for the remaining ten names.

Columbus must stand for the beginning of the vast American New World. William the Silent, Richelieu, and Frederic the Great represent the creators of three nations. Cromwell was as great a man, but he was a revolutionist rather than a founder, and I will not insert our own hero. Newton will be everywhere accepted as the type of all modern physical science, and Franklin is perhaps the earliest and best known name in the enormous range of electrical invention. And Stephenson is obviously the natural representative of the locomotive with all its consequences. With more than one-seventh of our twenty names already devoted to modern mechanical inventions, I am not prepared to follow our multi-millionaire Iron-Lord in adding more inventors. Modern mechanical improvements are made up of a series of gradual development of known forces, and there are now before us some scores of nearly equal merit and of possible utility. For myself I am far from clear that gas, telephones, motors, rotary engines, wood-pulp, and aeroplanes have added at all to human happiness or to our moral education. For modern science I select Darwin as having revolutionised modern biology; and for modern philosophy I naturally insist on claiming Auguste Comte—"I King Charles' Head" be—d—d.

Here is my List of Twenty.

FREDERIC HARRISON.

[ATTACHMENT/ENCLOSURE]

Who are the Twenty Greatest Men ?

MR. CARNEGIE'S LIST.

1. Shakespeare.
2. Morton, discoverer of ether.
3. Jenner, discoverer of vaccination.
4. Neilson, inventor of hot blast in manufacture of iron.
5. Lincoln.
6. Burns, the Scotch poet.
7. Gutenberg, inventor of printing.
8. Edison, applier of electricity.
9. Siemens, inventor of water meter.
10. Bessemer, inventor of steel process.
11. Mushet, inventor of steel process.
12. Columbus.
13. Watt, improvement on steam engine.
14. Bell, inventor of telephone.
15. Arkwright, inventor of cotton-spinning machinery.
16. Franklin, discoverer of electricity.
17. Murdock, first to employ coal as illuminant.
18. Hargreaves, inventor of spinning Jenny.
19. Stephenson, inventor of locomotive.
20. Symington, inventor of rotary engine.

MR. FREDERIC HARRISON'S.

1. Moses, early theocratic civilisation.
2. Homer, ancient poetry.
3. Aristotle, ancient philosophy.
4. Archimedes, ancient science.
5. Julius Cæsar, the Roman Empire.
6. St. Paul, Apostle of Christianity.
7. Charlemagne, founder of European State System.
8. Dante, father of modern poetry.
9. Gutenberg, inventor of typography.
10. Shakespeare, greatest of modern poets.
11. Columbus, discoverer of the American world.
12. William the Silent, founder of Holland.
13. Richelieu, founder of modern France.
14. Frederic the Great, founder of Prussian State.
15. Newton, founder of modern astronomy and physics.
16. Franklin, discoverer of electric forces.
17. Watt, inventor of steam-power machines.
18. Stephenson, inventor of locomotive.
19. Darwin, founder of new science.
20. Comte, founder of the Positive Philosophy.

MY OWN.

Signature \_\_\_\_\_

ONE HUNDRED AND SIXTEENTH YEAR



MERGER P. MOSELEY  
President and General Manager

DEC 13 1911  
8 Spruce Street, NEW YORK,  
December 14th, 1911.

Mr. Thomas A. Edison,  
East Orange, N.Y.

Dear Sir:-

Enclosed editorial is from our issue  
of to-day.

Yours very truly,

*M. Mosley*

Publisher.

MPM/P

[ATTACHMENT/ENCLOSURE]

EDISON ON TRUSTS

Thomas A. Edison has been observing conditions on the other side of the Atlantic and travel has opened his eyes in other fields than that of electricity in which his inventive genius may find scope for its play. He is now studying the trust problem in the light of what he saw in Germany, especially where combinations of capital are not feared by either the government or the people. In venturing into new paths, Mr. Edison says:

I am trying to "invent" a plan which will be satisfactory to all the commercial bodies in this country—a plan of business that will be practical and work to the benefit of manufacturers and the public. Whether it is possible to invent such a plan I cannot say, because the industrial situation is so complicated. We best see the extent of business complications where we drastically change the tariff. Results are far-reaching and hurt industries which the change is meant to benefit, producing good and bad results in unexpected places.

His observations abroad have opened Mr. Edison's eyes to the lack of business skill in Congress and the State Legislatures of the United States. In England he saw men of affairs, bankers, manufacturers, merchants, in parliament and in cabinet positions. Lawyers play a comparatively small part in the legislative or the executive departments of foreign governments, while in the United States they well might monopolize the business of making and administering the laws of the country. Some of Mr. Edison's caustic reflections on this situation are as follows:

The men who made the trust law didn't know pig iron from coffee, so far as the producing business is concerned. The minutest details of every industry must be considered before a satisfactory law can be evolved.

They don't know, and haven't the time to learn, the techniques of business. They have to grind out so much law as a matter of course. But as a matter of fact if the oil doesn't flow off the tank that ran off Long Island it's likely to influence the price of locomotives in Japan.

It is a hopeless task for lawyers to try to make such a law unassisted by the industrial experts of the country. No amount of amending the Sherman law can make it right. In this country, with numerous Legislatures and a Congress pouring laws out at regular intervals, what chance has business?

Mr. Edison does not believe in out-throat competition which creates energy and power that could be put to good use in advancing business interests in ways profitable for both producer and consumer.

As some of the trust prosecutions now threatened or pending have to do with the rights of owners of patents to fix terms of sale of patented articles, he is directly interested in the subject. He suggests the following as a basis for such laws:

The remedy for this country is a law which shall be generic, which shall prevent destructive competition, and give every man just what he wants in the way of co-operative association—that is, so much as he is entitled to of what he wants. A law which shall permit profits of industries to associate for the purpose of preventing destructive competition without injury to the public. A law which shall prevent the monopolization of profits from the world's mines except as they can make legitimate use of the law of supply and demand. Make it against the law to combine to increase prices, not for the companies, but for the responsible officers of the corporation.

It is apparent that Mr. Edison has been favorably impressed with the German system of trusts which prevents and checks the making of combinations to inflate prices. It remains to be seen whether he can improve on the work of the lawyers in Congress.

*Post*

SCIENTIFIC AMERICAN  
MUNN & CO., INC., PUBLISHERS  
361 BROADWAY, NEW YORK

L

December 14, 1911

Thomas A. Edison, Esq.,  
Orange, N. J.

*Handwritten notes:*  
~~Handwritten scribble~~  
*OK*  
*Let him know*  
*Wife's Room*  
*Frank J.*

Dear Sir:

In confirming the conversation held over the telephone with your representative, we beg to inform you that we have no objection to the reproduction of the interview with you, published in a recent issue of the Scientific American, in the German publication to which you refer, provided credit be given to the Scientific American.

Very truly yours,

*Handwritten signature*

J. A. HILL & COMPANY  
Riverside Building  
225 FIFTH AVENUE  
NEW YORK

*File*  
*Ans 12/19*

*Dec. 16, 1911*

*Mrs. Thomas A. Edison,  
West Orange, N. J.*

DEC 18 1911

*Dear Mrs. Edison,*

*No doubt you recall that during our recent interview for the "Century Magazine" we spoke of detective stories and I mentioned that I had written several for the "Cosmopolitan" about a "scientific detective".*

*Under separate cover I am sending you one of the first copies of my book which will be out in a month or two now - "The Silent Puddle".*

*If you find time to glance at it, I should be very much obliged to you if you could see me some time at your convenience. There seems to be a great demand for such "scientific" fiction and I am sure that the "dean of inventors" must have some great ideas on the subject. I am,*

*very sincerely yours,*

*Leitchford D. Case*



# Manufacturers Record

*Richard M. Edmonds,  
Editor and General Manager*

Baltimore Dec. 20/11.

Mr. Thomas A. Edison,  
Orange, N. J.

*W. W. W.*  
6-22-11

Dear Sir:-

Enclosed are a few newspaper clippings discussing your recent interview with Mr. Edmonds, which we trust you may find of interest as showing how widely your interview has claimed the attention of newspapers throughout the country.

Very truly yours,

VHF:MMS

*W. W. W.*  
Treasurer.

P. S.--We understand that the newspaper correspondent, "Holland," has made your interview a feature for his newspaper letter today.

W. Cabot  
Lecch

To The Editor of the Hartford Times -

Don't worry, all the conditions you  
speak and several thousand others in addition  
can all be taken care of <sup>when the</sup> proper  
<sup>is worked out</sup> plan, and incentives to <sup>work</sup> reduction of  
costs increased, -

Σ

W. Cabot

[ATTACHMENT/ENCLOSURE]

NEW ENGLAND  
NEWSPAPER BUREAU.

114 FEDERAL ST., BOSTON  
Phone 6220 Main

CLIPPING FROM

"ARTFORD (CONN.) TIMES

Thursday, Dec. 16, 1911.

...ing possible to "imitate" the minds  
...wards Agriculture.  
...  
...NON-PROGRESSIVE IDEAS.  
...  
...Thomas A. Edison an level-headed  
...an American as we know, writes in the  
...Manufacturers' Record about the big  
...business combinations and how to  
...control them: "The danger that disas-  
...trous competition in business could  
...be avoided by prohibiting the sale of  
...manufactured articles at less than cost,  
...plus legal interest on the investment.  
...But the man with a new factory, filled  
...with new machinery and a head full  
...of ideas could produce any kind of  
...goods more cheaply than the owner  
...of an old factory, equipped with old  
...machinery and himself, perhaps, not  
...able to take the knowledge of his  
...business, and in his way of carrying  
...it on. Who, then, shall pay what is  
...the cost of production? Mr. Edison's  
...idea is to strike an average; he  
...would have a law compelling manu-  
...facturers of the same kind of goods  
...to well-defined districts to co-operate  
...in the maintenance of a central bureau  
...that will furnish the extra cost of pro-  
...duction in each plant. It would be  
...illegal, then, he says, for one to sell  
...below the average cost plus the fair  
...profit on the cost, outside."  
...It may be admitted, at once, that  
...such a plan as this would stop com-  
...petition in prices, and there would re-  
...main, plus competition in the quality  
...and style of what is produced. Let  
...us see how this rule would operate.  
...One of the big factories in Hartford  
...manufactures tires for automobiles.  
...Suppose some Hartford mechanic  
...should develop improvements in the  
...tire-making process which would cut  
...down the labor cost of them one-half.  
...The Hartford Rubber Works could not  
...reduce its price on tires to the ad-  
...vantage of giving the public a better  
...tire, improvement unless all the other  
...tire-makers in the country were to in-  
...crease their own tire-making plants.  
...Assuming it must be so, and that the  
...stockholder's price, which would give his  
...stockholder a larger profit than would  
...be possible if the stockholder could

other concern not having the same  
advantage in production.

Again, take the refining of petro-  
leum. The Standard Oil company has  
made its great success by monopolizing  
all other refining companies in the  
process, and it has, as is well known,  
given the public the benefit of its im-  
proved processes, thus cheapening all  
petroleum products to such an extent  
that it has been difficult for other com-  
panies to share in the business. But if  
Mr. Edison's plan had been in force  
during the past thirty years the Stan-  
dard Oil Company could never have  
given the public the full advantage of  
its improvements, and the result must  
have been that hundreds of millions  
of dollars would have been paid by  
the American people for petroleum  
products within the past three de-  
cades that have not been paid. Would  
the country have progressed as it has  
done if such a system of price regu-  
lation had been in existence?

Suppose some man were to invent a  
new process of steel-making, obtain a  
patent on it, and sell that patent to the  
United States Steel corporation. That  
concern would not, according to Mr.  
Edison's plan, be permitted to reduce  
the price of steel in proportion to the  
saving in the cost of manufacture, but  
could go on charging a price which  
would be controlled by the amount of  
steel which other companies were ca-  
pable of turning out by the present  
more expensive process.  
It is, in fact, surprising to find an  
inventor as great as Thomas A. Edison  
proposing to apply such a brake to the  
wholes of progress as would be  
the attempt to fix prices so as to pro-  
tect antiquated and obsolete mechan-  
ism and methods.

The American people are not likely  
to give enthusiastic over a scheme  
which might enhance the prices of  
what they buy to the extent of several  
million of dollars a year merely for  
the sake of retarding the industrial  
progress and compelling this nation to  
play second fiddle to great nations like  
Great Britain and Germany, which will  
never adopt such a non-progressive  
plan.

**Edison General File Series**  
**1911. Autograph and Photograph Requests (E-11-04)**

This folder contains requests for Edison's autograph or photograph. Included are letters from William S. Andrews of the General Electric Co., concerning a photograph co-signed by Edison and Charles Steinmetz. There is also mention of Steinmetz's visit to the West Orange laboratory. Other correspondents include Emil Rathenau of Allgemeine Elektrizitäts-Gesellschaft, portraitist H.P. Hansen, and politician and diplomat Myron T. Herrick.

Approximately 20 percent of the documents have been selected. The items not selected consist primarily of letters from autograph collectors and from newspapers or periodicals.

Received at summer bay in 9th block, when you were coming

Printer  
Edison  
EDISON BUILDING,  
132 ADAMS ST. CHICAGO, ILL.

Mr Edison  
Do you want to reprint  
H. W. H. H.  
Aug 17/11  
Henry  
Chicago Jan 7 4/17

My dear Edison:

I should like a copy of  
the photo. from which was  
made the picture in the  
Jan National Magazine. I  
like it the best of any of the  
many I have seen.

The only one I have is  
one you gave me in '83. They  
don't have an Enlarged one  
of that picture taken at  
Sarasota.

Doesn't flatter myself the case  
for mine but if do I have  
one taken last Decoration Day.

Sincerely  
Burdette

Send: Andrews

GENERAL ELECTRIC COMPANY

PRINCIPAL OFFICE  
SCHENECTADY, N. Y.

In Reply Refer to

*Ans. 1/11/11*

Schenectady, N.Y., Jan. 12, 1911.

Mr. H. F. Miller, Secretary,  
The Edison Laboratory,  
Orange, N. J.

Dear Mr. Miller:-

I am sending to you by this mail under separate cover a photograph of Mr. Edison and Dr. Steinmetz, which was given to me by Mr. Chas. D. Edgar, of Boston. Dr. Steinmetz has put his autograph on this photograph, and I should feel very much obliged if you would kindly ask Mr. Edison to do the same some time when he has a moment to spare, and then return it to me by mail. I enclose stamps for return postage.

With kind regards, I remain,

WSA/LB

Yours very truly,

*W. S. Andrews*

---

Friends - Andrews - W.S.

Schenectady, N.Y., Jan. 19, 1911.

Mr. Thomas A. Edison,  
Orange, N. J.

JAN 20 1911

My dear Mr. Edison,-

I beg to thank you very much for kindly putting your  
autograph on the photograph I sent you, and which I received  
back this morning in good condition through the kindness of your  
Mr. H. F. Miller.

With best wishes,

Yours very truly,

WSA/LB

W. S. Andrews

P.S. Dr. Stearns has been  
telling me about his pleasant  
visit to your Lab - and  
the many interesting things  
that he saw there - W.S.A.

Schenectady, N.Y., Jan. 19, 1911.

Mr. H. F. Miller, Secretary,  
The Edison Laboratory,  
Orange, N. J.

My dear Mr. Miller,-

I beg to thank you very much for your favor of the 17th inst. and also for the photograph with Mr. Edison's autograph, which came safe to hand this morning. I am very much obliged to you indeed for your kind services in this connection, and remain,

Yours very truly,

WSA/LB

*W. S. Andrews*

---



Son

TEL. 2200 J.

**ABE COHEN,**

*Justice of the Peace, and Auctioneer.*

REAL ESTATE AND INSURANCE AGENT

104 WASHINGTON ST.,

Baltimore, Md. *Jan 20 1911*

Thomas Edison  
Orange N.Y.

JAN 21 1911

Hon Sir!

I have this day sent  
you by mail a book on Electricity  
Printed in 1802 It may be of interest to you  
I came across it at an auction sale that I  
had- I would feel highly honored if you would  
send me your photo and assure you that I  
would cherish it very much

Respectfully  
Abe Cohen

Photo sent  
acknowledged  
Jan 22 1911  
Edison

Send photo &  
Thank for book

From  
Mar 27/11

Get photo

Head Mr Edison -  
you may  
remember my visit  
to your works at  
Orange on Friday  
afternoon last re  
Storage Battery & the  
kind interview I had  
with you at that  
time.

I am now writing  
to ask if you will  
favor me with a signed  
photograph of yourself,  
that I may have a  
reminiscence before me  
of having met the  
greatest inventor of all  
time

Yours faithfully  
Gordon B. Perry

661 Huron St.  
Toronto, Canada  
Jan 24/10.

*Pathefrum*  
D. UNDERWOOD, PRESIDENT

HENRY A. STRONHEVER, VICE PRESIDENT

E. UNDERWOOD, TREASURER

C. N. THOMAS, SECRETARY

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HOUSE BEAUTIFUL  
METROPOLITAN  
BROADWAY  
PEAYSON'S  
STRAND  
SYSTEM  
TECHNICAL WORLD  
WORLD TODAY  
NATIONAL  
SCIENTIFIC AMERICAN  
COLLIER'S WEEKLY  
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SATURDAY EVE. POST  
YOUTH'S COMPANION  
AMERICAN BOY  
OUTLOOK  
INDEPENDENT  
ILLUSTRATED OUTDOOR  
NEW  
GRAPHIC  
SPHERA  
BLACK WHITE  
ILLUSTRATED LONDON  
NEW  
AND OTHER MAGAZINES  
WEEKLY DAILY AND  
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OF THE WORLD.

150,000 SUBJECTS NOW READY; MORE CONTINUALLY  
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NATIONAL EVENTS AND PROMINENT PEOPLE; AN END-  
LESS VARIETY OF SPECIAL FEATURES COVERING ALMOST  
EVERY SUBJECT ON WHICH PEOPLE TALK OR WRITE.

5 W. 19th St. cor. 5th Ave.

NEW YORK Jan. 26, 1911.

**MAIN OFFICES**  
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BRUNSWICK, N.J.

TELEPHONES (3333) MELSEA

Secretary,  
Mr. Thomas A. Edison,  
East Orange, N. J.

Dear Sir:-

Our attention has been called  
to a photograph which appeared in the  
Cleveland Leader, Sunday, Nov. 20th,  
clipping of which we herewith enclose.

Is it possible for us to se-  
cure from you a copy of this photograph?  
We will make a negative of it and re-  
turn it to you in good order.

We have had many requests for  
such a photograph of Mr. Edison and pic-  
tures of his birth place, and if you can  
help us out we will consider it a great  
favor.

Kindly return the clipping.

Sincerely yours,

UNDERWOOD & UNDERWOOD.

*C. J. Richard Abbott*  
ILLUSTRATION DEPT.

HDA:K

(encl.)

*Note 2/27/11*

*Harry send out  
Ampt. 1/27/11  
J. O. Calen & Assoc  
of good photo  
of send negative  
ccw*

GENERAL ELECTRIC CO.  
30 CHURCH ST., NEW YORK.  
PRESIDENT'S OFFICE

*Photo sent  
March 1-1911*

February 23rd.

Mr Thomas A Edison,  
Orange, N J

*Don't have me  
photo to sign*

My dear Mr Edison:

Mr Myron T. Herrick (ex-governor of Ohio and a personal and business friend of Mr Coffin for very many years) was in calling upon Mr Coffin today, and happening to see your picture in the office ((we have only three of them now!!!)) asked me if I would not write you, and remind you that he had had the pleasure of meeting you several times, is a great admirer of you, and would be especially gratified if he <sup>also</sup> could, ~~see~~, have one of your photos, with your autograph upon it--one of those "serious-minded" effects, you know--for his new library in his Cleveland home. Now what can I tell him? All your pictures are good, but you can probably tell the one you'd rather he should have.

*Sincerely,  
A. Keeler*

GENERAL ELECTRIC CO.,  
30 CHURCH ST., NEW YORK.  
PRESIDENT'S OFFICE

March 9th.

H F Miller, Esq.,  
Secretary.

Dear Sir:

Your note of the 28th ult., followed a day or two later by Mr Edison's autographed photo, have been received, and Gov. Herrick is very much pleased to have this and will personally acknowledge to Mr Edison. He also wishes to thank you for your courtesy in the matter.

Very truly yours,



*fav*

MYRON T HERRICK  
CLEVELAND

March 11, 1911.

Mr. Thomas A. Edison,

West Orange, N. J.,

MAR 14 1911

My dear Mr. Edison:

On my return home today from New York I find an excellent and very characteristic photograph of you with your autograph. I sincerely appreciate your kindness in letting me have it.

I have the photographs of many prominent men in my library, but of them all I am sure that my little grandson -- who is named after me, will inherit the one of you as that of the man who contributed most to the comfort and happiness of his fellow men. I am sure that there is nothing that I can leave him that he will prize more highly than the photograph of you.

I shall never forget the afternoon that I spent with you in your laboratory; and I shall always remember with what intense interest I listened to your account of the invention of the phonograph, and to your tolling of the first words that you spoke into the machine, "Mary had a little lamb, etc". I have put this incident down as one of the things that I shall relate should I ever make a record of my experiences.

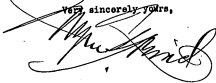
I well recollect the luncheon that we had

together at Mr. Coffin's, and your reply to my question of him as to the money making feature of the phonograph -- you said that they thought there was no money in it, and, therefore, let you keep it.

A number of years ago, before I met you, in going over the Wheeling & Lake Erie Railroad, as one of the officers of the road, your little home at Milan, Ohio was pointed out to me. I was very much interested in seeing the place where you spent your early boyhood.

I sincerely hope that you have many years of usefulness and happiness before you.

Very sincerely yours,

A handwritten signature in cursive script, appearing to read "Mr. Coffin". The signature is written in dark ink and is positioned below the typed text "Very sincerely yours,".



700

~~H. Hansen~~  
Artist  
NEW YORK CITY

tell him to send  
photos

June 28-11

Mr Thomas A Edison  
Orange N.J.

JUN 28 1911

Ans 6/29

Dear Sir

I have taken the liberty of making a stippled portrait of yourself - the drawing is made on sheepskin parchment

I am desirous of presenting my home city (Muskegon Mich.) with a collection of the portraits of the great men of United States for their new Art Gallery which is being planned I have a number of autographed portraits of Presidents and literary men and would be more than pleased as well as highly honored if you will do me the honor to allow me the privilege of sending you this portrait for your valuable autograph.

If you do not think the portrait is worthy of this distinction I trust you will allow me to make another until I make one that meets with your approval.

Hoping I may have the pleasure of hearing from you and apologizing for intruding on your valuable time I am a

Sincere admirer

H. Hansen 345-W-27<sup>1/2</sup> St.

Mr. Edison

Portrait on table

H. H. Hansen

Artist  
NEW YORK CITY

23-111

Mr. Thomas Edison July 2-11

Dear Sir

As per your good letter through your secretary I have shipped you by express the portrait of yourself which I trust you will find worthy of so distinguished an autograph as yours. It will not only be a great honor to the writer but a great pleasure to "the old folks" to be able to present your autographed portrait to Muskegon.

In returning the portrait please be good enough to ship it by express and allow the charges to follow.

Thanking you for past favors and awaiting the return of the portrait with great pleasure I am

Very respectfully

H. H. Hansen

345 - W - 27th St.

1600

*H. Hansen*  
Artist  
NEW YORK CITY

July 24 - 11

Mr. Thomas A. Edison.  
Orange, N. J.

JUL 24 11

Dear Sir,

I trust that you received the portrait which I expressed you under date of July 1<sup>st</sup> and that I may have the pleasure of adding your autographed portrait to the collection which as stated in my previous letter, I wish to present to my home city Muskegon Mich.

In returning the portrait, if it is an inconvenience to return same by express (charges collect) I will be pleased to send a messenger for it on receipt of address from you.

Awaiting the pleasure of a reply at your convenience I am,

Very respectfully,

*H. Hansen*

345-W-27 26 St

Picture received by me at Mr. Hansen's house, 345, W 27<sup>th</sup> St., N.Y. July 24, 1911. W. H. Meadows

Aug 7/31/11

H. Hansen

Artist  
NEW YORK CITY

July 27-11

Mr. Wm. A. Madocroft.  
Orange N.J.

Dear Sir

I beg to acknowledge receipt of your letter of the 27<sup>th</sup> inst and also to thank you for the safe delivery of the portrait which I prize very highly. I will appreciate it very much if you will extend my most hearty thanks to Mr. Edison for the kindness and honor he has shown my efforts.

Replying to the method I used to make this I beg to advise that the portrait is made by stippling with a pen one dot at a time. All of it was made under an enlarging lens and the two eyes of pen I used is the crow quill pen and the lithograph pen. The time it took to make this portrait was about 40 hours. The reason that it looks like an etching is that no eraser has been used on it, the original pencil sketch is still under the drawing. I know of no technical name for this drawing except that it is a stippled pen and ink drawing on sheep skin parchment. As to the lasting qualities, having accidents it would be impossible

*W. B. Hansen*

Artist  
NEW YORK CITY

to judge the life of drawing made this way as there are samples of parchment in the Metropolitan over 2000 years old.

Should you feel interested in getting a portrait I could make you one at the low figures of \$25<sup>00</sup>, my prices in Chicago & Pittsburg range for this size for \$50<sup>00</sup> to \$80<sup>00</sup> for a size a little larger. I would much prefer should you be interested to make one of a different pose if you could get a photograph. If not I could duplicate this one or rather get as good a one but an exact duplicate would be impossible.

Thanking you again and hoping to hear further from you.

Yours very truly

*W. B. Hansen*

345 W. 27th St.

4a

**ALLGEMEINE ELEKTRICITÄTS-GESELLSCHAFT**

KAPITAL 100 MILLIÖNEN MARK.

Direktion.

Friedrich Karl-Ufer 2-4.

BERLIN NW., den. 17th Oct. 1911

067 110 111

My dear Mr. Edison:-

I have just received from Mr. Bergmann the very fine portrait of yourself which you have so kindly furnished with your autograph.

This souvenir portrait has given me very great pleasure indeed, and I beg you, my dear Mr. Edison to accept my sincerest thanks for same.

With kindest regards

Believe me,

Yours cordially

*Dr. P. Schumann*

Mr. T.A. Edison



FRANK E. PRICE, MANAGER  
TELEPHONE CALUMET 072.

THE  
**Anderson Carriage Co.**  
MAKERS OF  
**The Detroit  
Electric**

OUR ELECTRICS WILL RUN FARTHER ON  
ONE CHARGE THAN ANY OTHER IN THE WORLD



MAIN FACTORY AT DETROIT, MICH.  
CAPITAL \$ 1,000,000.

DIRECT FACTORY BRANCH  
2816 MICHIGAN AVE.

Chicago, Ill.

10/20/11  
Ans 10/21

Mr. Thos. A. Edison,  
Orange, N. J.

Dear Mr. Edison,

As you will note, I am connected with the Detroit Electric in Chicago and have had the pleasure of selling quite a number of Edison batteries in Detroit Electric in and out of this city.

Several years ago I had a position as Page in the House of Representatives in Washington at which time I had an opportunity of securing signatures of quite a large number of very prominent men both in this country and abroad which have been put together into an Autograph Album.

For some time past I thought of writing you to request you to give me your autograph which I should like to add to my present collection. Undoubtedly you have a great many of these inquiries but I thought perhaps you might be willing to favor me under the circumstances.

I wish to state that the Edison batteries which I have had the pleasure of selling here have given excellent satisfaction and the set of 40 cell A6 Edison batteries which I have been using in my demonstrating car have travelled over 25,000 miles. At the present time I can call upon the batteries for in the neighborhood of 300 ampere hours at any time I wish. I have gotten as high as 308 ampere hours from this battery. To say I am well pleased is putting it very mildly as I have had a great deal of experience with the lead formation for the past eight years.

Thanking you in advance for any favor which you might wish to extend, I beg to remain

Yours most sincerely,

THE  
**The Detroit  
Electric**  
FACTORY BRAND

PENROSE REED

SALES MANAGER

2816 MICHIGAN AVENUE  
TELEPHONE CALUMET

CHICAGO

With kindest regards, I beg  
to remain,

Yours sincerely  
F. L. Smith  
F.

180 Matvgs "L"

THE Friends,  
My dear Smith  
When I see a chance see you  
I will call on you  
December 4<sup>th</sup> 1911  
Thomas A. Edison Esq.

My dear Mr. Edison =

I was very  
sorry not to see you  
the other day when I called.  
I have received your  
photographs with your  
signature, in which I send  
you many thanks -  
I shall keep it with my  
most valued possessions



**Edison General File Series  
1911. Automobile (E-11-05)**

This folder contains correspondence and other documents relating to automobiles and the use of storage batteries in electric vehicles. Many of the items for 1911 are unsolicited requests for Edison's advice and assistance. There are also several letters pertaining to automobiles owned by Edison and his family. The correspondents include William C. Anderson of the Anderson Carriage Co., A. H. Charles Dalley of the Electric Carriage & Battery Co., A. T. Smith of the Packard Motor Car Co., and representatives of the Simplex Automobile Co.

Less than 10 percent of the documents have been selected. The unselected material consists primarily of promotional items and unsolicited correspondence.

Georgia Railroad

Ans 7/27

J. N. Pittman, Agent

Macon, Ga. Jan 30 th 1911

Mr Thos. A. Edison.

Orange, N.J.

Dear Sir:-

My opinion is that your device could not work - if you study the theory of a pneumatic tire

I have an idea of a puncture proof Automobile tire that I would like very much for you to secure patents etc on. I am a rate clerk in a railroad office and perhaps know more about rates than I do about automobiles. I have no capital or am not financially able to put my idea through so am sending it to you for your opinion and to see if you will take the idea and get something out of it. I do not expect much you can make your own terms anything will do me.

My idea is to put inside an auto tire or shoe a steel rim stretched against the inside tight, this rim I believe should be coated with rubber to make it resilient the tire must first be securely fastened with bolts or in some way to the wooden rim of wheel. I am sending a sketch enclosed

- A is rim of wheel
- B is tire
- C is steel rim (ink line)
- D is coat of rubber (red line)
- E is screw for tightening steel rim against tire

Rim will have to be oval so as to shape tire thus ( )

Trusting that you will give this your personal investigation and hoping that you will be able to make something out of it, for if I understand the auto trouble right they are badly in need of a puncture proof tire.

Please let me hear from you as early as possible

Yours Truly

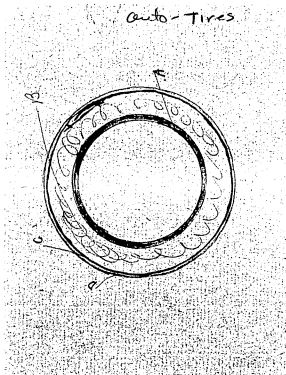
A. L. Rogers.

A. L. Rogers

Care Agt Ga R R  
Macon Ga

reference to department concerning rubber on tire work -

[ATTACHMENT/ENCLOSURE]



*auto-horn*

THE ELECTRIC CARRIAGE & BATTERY CO.  
RAUCH & LANG ELECTRICS.

PRODUCT OF THE RAUCH & LANG CARRIAGE CO.  
CLEVELAND, OHIO. ESTABLISHED 1853.

SALES  
STORAGE  
REPAIRING.

M. L. HUBNER, President,  
A. J. CRAB, Dealer, The Firm,  
H. C. TRUMER, Secy.,  
D. H. FRISCOLANG, Sec.,  
R. L. LUNT, E. E. Chief Eng.

MINNEAPOLIS, MINN.

Feb. 10, 1911.

*Ans 7/17/11*

*Yours of Feb 10 Recd*

*Yes it is possible to carry out your*

Thomas A. Edison,  
Orange, N.J.

*Suggestion. The inventor of the  
Klaxon horn is I think working  
on the scheme. I could furnish the material.*

Dear Mr. Edison,

Would it be possible to make  
an automobile horn in the nature of a phonograph,  
that is, have an indestructible cylinder or disk,  
upon which say for instance, you could put the  
word "Packard", so that when the horn was bro't  
into service it would shout "Packard". This  
same kind of a horn could be placed on a Peerless  
and shout "Peerless", or on the Pierce Arrow, and say  
"Pierce Arrow". Would it be possible to make  
the cylinders interchangeable, have for instance  
a talking cylinder to shout "Packard", or a  
whistling cylinder, etc.

*I will sign*

This idea came to me while listen-  
ing to the conversation of several supply men  
in the Ponchatrain hotel at Detroit, Mich. I  
believe that such a device would meet with great  
favor, providing that the emission of sound  
would be in proportion to the need of same.

Will you think this matter over  
and let me know if such an arrangement could be  
made? Hoping you will have time to take  
this matter up, I remain,

Yours sincerely,

THE ELECTRIC CARRIAGE & BATTERY CO.

*W. H. Lang*

Vice Pres. & Sec.

auto - horn

# THE ELECTRIC CARRIAGE & BATTERY CO.

## RAUCH & LANG ELECTRICS.

PRODUCT OF THE RAUCH & LANG CARRIAGE CO.  
CLEVELAND, OHIO. ESTABLISHED 1853.

SALES,  
STORAGE,  
REPAIRING.

M. L. HUGHES, President,  
A. H. CHAS. DALLEY, Vice Pres.,  
H. C. FRIMMER, Cashier,  
G. H. WINGFIELD, Sec.,  
R. L. LUNT, E. C. CLAYTON.

MINNEAPOLIS, MINN.

Feb. 20, 1911.

*Ans 2/24/11*

*If I was in your position  
I would apply for a  
patent & then get  
somebody to  
lick it in shape  
for you.*

Thomas A. Edison,  
Orange, N.J.

Dear Mr. Edison,-

Your very kind letter of the 17th. is before me, and I notice your remarks in regard to the inventor of the Klaxon horn.

When I was in Detroit Monday, Feb. 6th., I met Mr. W.O. Turner, Secretary of the Lovell-McConnell Mf'g. Co., of Newark, N.J., and suggested to Mr. Turner that such a horn could be made, and become a great commercial success. He said that he would take it up with his people at once, so you see that they are working on it from a suggestion that I offered Mr. Turner myself.

Why can't you and I together bring this matter to a focus? Am very sorry that I have to be so far away from you as I would like to take this matter up with you in Orange, feeling as I do that this would be a wonderfully popular invention, and one out of which we could both make money.

Will you kindly advise me what course to pursue in order to protect my suggestion.

Hoping that you will favor me with a reply at your convenience, I remain,

Yours very truly,

*A. H. Charles Dalley*

B

RAUCH & LANG ELECTRICS  
WALKER BALANCE GEAR ELECTRIC TRUCKS

A. H. CHARLES DALLEY  
VICE PRESIDENT AND SECRETARY

THE ELECTRIC CARRIAGE & BATTERY CO.  
ST PAUL - MINNEAPOLIS

Auto-Tires  
Aug 1/1911

Washington D.C. Mar. 31<sup>st</sup> 1911 Genl. Del. Station "F."  
Mr. J. B. A. Edison My Dear Sir.

I have invented a substitute for pneumatic tires for automobiles only to find that in a measure my invention was patented 17 yrs ago for use on bicycles. It cannot be successfully applied to bicycles owing to weight but as there is no more weight than at present used on automobiles it is ideal for this purpose.

The patent taken out 17 yrs ago is very crude. The manner of attaching his tire to the rim is a failure while mine is successful. My tire is made endless while his is not therefore the improvements I have made upon his tire are more valuable than his invention. My invention is entirely original. I did not know that patent existed until I applied. With your wide exposure your advice will help me. Kindly advise if I will be justified in a financial way of going ahead, in the manufacture and sale of this tire with only a patent on the improvements as above stated. I fear that others would make and sell it as soon as I established a demand for it. And thus reap my harvest. Would the folks in the field have any great advantage? I thank you in advance for the information I beg to remain  
(Enc. 24) Sincerely  
G. E. Reed.

If the improvement you have made  
is essential to make it  
a success & you have  
it well covered in the  
claims - the patent  
would be just as  
valuable as if you  
got the claims <sup>for</sup>  
the old patent  
~~the old patent~~

- Ed. Howard

Planned

4/18/11

Mina -

Our young chauffeur  
has run the car into a pole  
& smashed it badly.

~~Dr.~~ Mr. Hutchinson has a  
man who drove his car  
several years & vouches  
for him - says he can get  
him & we can lay him  
off when we desire -  
It is not safe to use the young man  
we have - E





1861-1869 BROADWAY  
CORNER 91ST STREET.

CABLE: "PACKARDCAR", LIEBEN'S CODE  
TELEPHONE: 8800 COLUMBUS

*NEW YORK, N.Y., U.S.A. May 17, 1911*

Mr. Thomas A. Edison,  
Edison Storage Battery Co.,  
Orange, N. J.

Dear Sir:

I enclose a letter of introduction given to me  
by Mr. W. C. Anderson of Detroit.

In discussing this letter with our President, Mr.  
H. J. Budlong, he spoke of having met you, and asking also that,  
if convenient, I may have a few moments of your time by appointment.

The Packard Company are bringing out a new six  
cylinder model for 1912. An advance catalogue, giving a brief de-  
scription of this car, is mailed you under separate cover.

Hoping to be favoured with an opportunity of talking  
a few moments with you regarding this car, I remain,

Yours very truly,

PACKARD MOTOR CAR CO. of N. Y.

*A. P. Smith*  
Sales Manager.

ATS-00

[ATTACHMENT/ENCLOSURE]

ANDERSON ELECTRIC CAR CO.  
OF NEW YORK.  
Formerly



ALBERT WEATHERSV,  
MANAGER.

THE  
**Anderson Carriage**  
MAKERS OF  
*THE*  
**Detroit**  
*ELECTRIC*

OUR ELECTRICS WILL RUN FARTHER ON  
ONE CHARGE THAN ANY OTHER IN THE WORLD

DIRECT FACTORY BRANCH

2236 BROADWAY  
COR. 80TH ST.

**New York City**

May 16th, 1911



LARGEST PLANT OF ITS KIND  
CAPITAL STOCK \$ 1,200,000.

Mr. Thos. A. Edison,  
Edison Storage Battery Co.,  
Orange, New Jersey.

My dear Mr. Edison:-

This will introduce to you Mr. A. T. Smith,  
Sales Manager of the Packard Motor Car Company of New York  
City.

I have requested that he personally  
call upon you in the interest of the Packard "SIX" car, and  
hope you will be able to make a satisfactory purchase of  
a Packard car.

You know I have many times talked  
Packard, and you to be the owner of a Packard would be a  
good advertisement for them, and I know indirectly helpful  
to our proposition.

I am leaving for home this evening, and  
will write you in a day or two about the other matter.

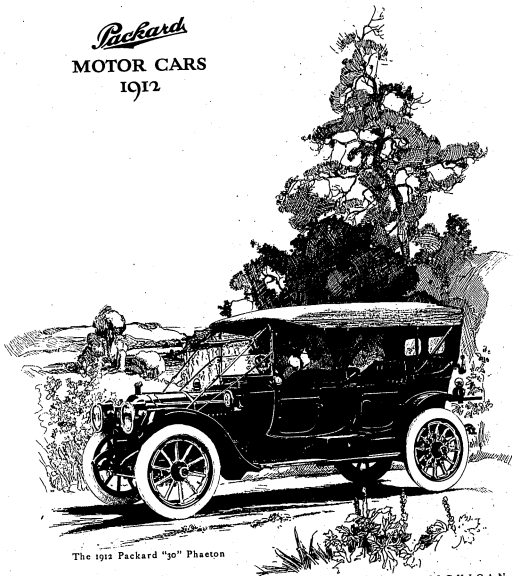
WCA:EA

Yours very truly,

*W. C. Anderson*

[ATTACHMENT/ENCLOSURE]

*Packard*  
MOTOR CARS  
1912



The 1912 Packard "30" Phaeton

PACKARD MOTOR CAR COMPANY, DETROIT, MICHIGAN

auto



1861-1869 BROADWAY  
CORNER 81ST STREET.

CABLE: "PACKARDCAR", LIEBER'S CODE  
TELEPHONE: 8900 COLUMBUS

NEW YORK, N.Y. U.S.A. June 5, 1911

Thomas A. Edison, Esq.,  
Lewellyn Park, N. J.

Dear Sir:

(Attention of Mr. Miller)

Referring to our telephone conversation of yesterday, also to letters of introduction which I mailed to you under date of May 17th, a copy of one of which is attached hereto, will you kindly arrange an appointment for me with Mr. Edison at his convenience if he is at all interested in the new six cylinder Packard car?

Advance announcements are mailed to you under separate seal.

Yours very truly,

PACKARD MOTOR CAR CO. of N. Y.

*J. J. Smith*  
Sales Manager.

ATS-00

*JUN 5-11*  
*Aug 6/11*  
*Say that my wife & I decided to buy either a Packard Pierce Arrow or Simplex but they soon decided to buy a Simplex*  
*as their shop was near by to have made it better of for*

autb



1861-1869 BROADWAY  
CORNER 6TH STREET.

CABLE: "PACKARDCAR", LIEBER'S CODE  
TELEPHONE: 6900 COLUMBUS

NEW YORK, N.Y. U.S.A. June 1911

*All right would like to see it*  
*10 E 11*  
*Reckless*

Thomas A. Edison, Esq.,  
Orange, N. J.

Dear Sir:

(Attention of Mr. H. F. Miller)

Beg to thank you very much for your kind letter of June 7th, replying to mine of the 3rd.

When the six cylinder Packard arrives, it will be a pleasure for us to offer it to Mr. Edison for an afternoon. We will notify you when we receive it and shall be pleased to have him try it out as a matter of mechanical interest and not as a ~~mere~~ demonstration with a view for sale.

Yours very truly,

PACKARD MOTOR CAR CO. of N. Y.

*A. T. Smith*  
Sales Manager.

ATS-00

C. T. NEUBOURG, Pres.

H. BROESSEL, JR., Treas.

C. A. BROESEL, Secy.

G. E. FRANQUIST, Supt.

J. G. DALE, Sales Manager.

TAE-onto

# SIMPLEX AUTOMOBILE Co.



## SIMPLEX AUTOMOBILE.

FACTORY:  
614 & 616 EAST 83<sup>RD</sup> ST  
TELEPHONES: 2142 LENOX.  
2143

SALESROOM: 1862 BROADWAY.

Mr. Thos. A. Edison,  
Orange, N. J.  
Dear Sir:-

The writer had the pleasure of receiving a card from your son a few days ago and he suggested that your car be equipped with steel tool box and add natural wood wheels and Fern Bu-bank top to the equipment. We ordinarily use a mahogany tool box but he thought a steel one would give better service. In addition we would advise that it is impossible to give your car an *adequate* clearance of 14" without blocking up the springs. The straight spokes of which we spoke to your son we are compelled to give a clearance of 14", which is entirely too high for this section of the country as it absolutely prohibits the running of the car at speed and also raises the center of gravity too high. The present clearance which is 11" at the fly wheel, we have always found entirely ample for touring in any section east of the Mississippi River.

Yours very truly,

SIMPLEX AUTOMOBILE CO.

BY James H. Bowen

FEB

*New York*  
I do not understand your letter in regard to clearance what will be the clearance between the road and the lowest point on the car? I believe the lowest point is the center of the wheel. Not clear to you. Depend on the road. I would advise to use steel wheels.

C. T. NEUBOURG, Pres.

H. BROESEL, JR. Treas.

C. A. BROESEL, Secy.

S. E. FRANQUIST, Supt.

J. G. DALE, SALES MANAGER.

TAE-amb

# SIMPLEX AUTOMOBILE CO.



INCORPORATED  
MEMBERS OF THE

## SIMPLEX AUTOMOBILE.

TELEPHONE:  
5188 COLUMBUS.

FACTORY:  
614 & 616 EAST 83RD ST  
TELEPHONES: 2142 LENOX,  
2143

SALESROOM: 1862 BROADWAY

*New York*, June 29, 1911

Mr. T. A. Edison,  
Orange, N. J.

Dear Mr. Edison:-

Kindly pardon the writer's not having answered your letter of June 23rd before this time, but the delay was caused by the letter going to the factory.

The road clearance at the lowest point on the 50 HP Simplex is 10" and the clearance of the fly wheel is  $1\frac{1}{2}$ " greater than that or  $11\frac{1}{2}$ ".

Yours very truly,

SIMPLEX AUTOMOBILE CO.

BY *Francis B...*

FHB

Day 10 inches, is rather low for places where I use the Car most your agent said that there would be no trouble to give me 11 inches between road & the lowest part & without blocking up the springs -  
Edison

Ed. Cants  
C. T. NEUBOURG, PRES.

H. BROESEL, JR., TREAS.

C. A. BROESEL, SECV.

G. E. FRANQUIST, SUPT.

J. G. DALE, SALES MANAGER.

# SIMPLEX AUTOMOBILE CO.



INCORPORATED  
MEMBERS OF THE

## SIMPLEX AUTOMOBILE.

TELEPHONE:  
5188 COLUMBUS.

FACTORY:  
614 & 616 EAST 83RD ST  
TELEPHONE: 2142  
2143 LENOX.

SALESROOM: 1862 BROADWAY

Mr. H. F. Miller,  
c/o Thos. A. Edison,  
Orange, N. J.

Dear Sir:-

The writer has your letter of July 5th in reference to the road clearance of the Simplex car. In my conversation with Mr. Edison I remember distinctly stating that we built some cars with special clearance for use in Goldfield and Tonopah and told him that we obtained this clearance by flattening the front axle and blocking up the rear springs to the same point. The construction of our front axle makes it necessary to flatten it entirely if we intend changing the clearance and when that is done we obtain an additional 4" or full road clearance of 14". This gives the fly wheel an actual clearance of 15 1/2" but it is absolutely impossible for us to raise the clearance to 11" without blocking up the springs. In that event we would put 1" blocks under neath each of the springs.

We regret very much that Mr. Edison did not understand the writer thoroughly and assure you that we are anxious to do whatever we can to please him. It is the opinion of our engineers that he will never be bothered by axle or motor clearance in any place in the East.

This is rather a difficult thing to explain in a letter and if you do not thoroughly understand it the writer will be pleased to call on you at your convenience, or better yet, some time during a visit to New York if you will call us up we will send the demonstrating car and take you to our factory where you can thoroughly understand what we mean by blocking up the springs, and straightening the axle.

Yours very truly,  
SIMPLEX AUTOMOBILE CO.

FHB

BY *Frank B. Boren*

*Please address your reply to the writer personally.*

*Am 7/12*

*New York, July 10, 1911*

*Day all right. I can change the axle here, as in all my cars I make new axles of Norway iron - ~~Edison~~*



C.T. NEUBOURG, PRES.

*Edison Tel - auto*  
H. BROESEL, JR. TREAS.

C.A. BROESEL, SECV.

G.E. FRANQUIST, SUPT.

J.G. DALE, SALES MANAGER.

# SIMPLEX AUTOMOBILE CO.



TELEPHONE:  
5188 COLUMBUS.

INCORPORATED  
IN THE STATE OF NEW YORK

## SIMPLEX AUTOMOBILE

FACTORY:  
614 & 616 EAST 83RD ST.

TELEPHONES: 2142 LENOX.  
2143

SALESROOM: 1862 BROADWAY.

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Sir:-

*New York*  
*NY*

Oct. 14, 1911.

Oct 16 1911

We enclose herewith receipt for \$4700.. in payment of balance on your Simplex car.

We trust that everything is satisfactory to you, and assure you of our appreciation of your order as well as our best services in the future.

Very truly yours,

SIMPLEX AUTOMOBILE CO.

FHB/HG.

(Enclosure)

By *Frank Bowen*

Ans

MURPHY ELECTRICITY RECTIFIER COMPANY

187 NORTH WATER STREET

ROCHESTER, N. Y.  
Nov. 21-'11.

Ans 11/21/11

*I have been working on how  
to help out the vehicle business  
if you have one better, I  
will assist you in  
any way I can*

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:

Through the courtesy of Mr. Beach I had, during the early summer, the pleasure of a visit with you, and an opportunity to discuss the Murphy Rectifier.

You will remember that, at the time it was arranged that the rectifier, which was then under construction, was to be brought to your laboratory for a demonstration and test.

Subsequent to my visit important improvements were made in the apparatus and we decided to postpone the demonstration until we could show you our latest design. We have just completed a model rectifier embodying these improvements. Our tests are very satisfactory to ourselves and we feel that we are ready to place the rectifier upon the market with entire confidence in its success.

No public demonstration of this improved rectifier has been made, for the reason that we first desire to avail ourselves of your kind invitation to demonstrate it in your laboratory.

We wish now to inquire if your invitation maintains, and if it is agreeable and convenient for you to investigate the merits of the apparatus at this time. If so we would like to make the demonstration at as early a date as possible, in which event, Mr. Murphy, the inventor, and myself will come to Orange with the rectifier.

Thanking you for your early consideration of this matter, I am

Very respectfully yours,

CRB/W

*B. R. Barnes*

*bring it on, or we  
will test it  
We must get a  
practical  
rectifier  
somehow*

C.T. NEUBOURG, PRES.

H. BRÖESEL, JR. TREAS.

C. A. BRÖESEL, SECT.

S. E. FRANQUIST, SUPT.

J. G. DALE, SALES MANAGER.

# SIMPLEX AUTOMOBILE CO.



## SIMPLEX AUTOMOBILE.

SALESROOM:  
1862 BROADWAY,  
TELEPHONE:  
5186 COLUMBUS.

614 & 616 EAST 83RD STREET,  
New York, Dec. 29th, 1911.

Mr. Thomas A. Edison,  
Orange, N. J.

*DEC 30  
Niagara  
E*

Dear Sir:-

We have your letter of Dec. 27th, and beg to say that we have replaced the Simms magneto, which you representative brought to the Salesroom, with a new Bosch magneto, which we hope will prove satisfactory.

We beg to take exception to your man's report in reference to our having supplied you with a second-hand magne to and we beg to assure you that this is not our practice.

We further beg to state that your car is surely a 1912 model but, this has nothing to do with the dual ignition system.

This, we wish to explain, has been attached as a stock equipment on all chassis which come out of the factory after December 1st, 1911.

If the new magneto, which we have furnished you, does not work satisfactorily, we would suggest that you let us have the car for a half day, as we are sure that there is some adjustment which can be quickly made to remedy this trouble.

Yours truly,  
SIMPLEX AUTOMOBILE CO.,

H. B. Jr.--B.H.

*H. Broesel*

*Mr. Miller at auto  
Please file with  
Simplex Correspondence  
solve me*

Mr Edison

The repairs on my Red  
Studebaker machine for the year  
amounted to \$217.<sup>08</sup> according to  
Shop Order. In view of the fact  
that both George & I use it to  
go to the bank, Laundry, Silver  
Lake up to the House etc Can  
I charge it up to General  
Expenses?

H. J. Miller

Yes TWG

\$21.50

\$217.<sup>08</sup>

**Edison General File Series  
1911. Aviation (E-11-06)**

This folder contains unsolicited correspondence from aviators, inventors, and enthusiasts requesting Edison's advice and assistance. The letters were mostly inspired by newspaper and periodical articles concerning Edison; few of them received any reply. The one selected item, which contains Edison's response in the form of marginalia, relates to the use of storage batteries in airplanes.

The unselected material includes blueprints, newspaper clippings, and an issue of *Flight*, a weekly publication of the Royal Aero Club of the United Kingdom. The subjects pertain to airplanes, helicopters, dirigibles, and flying machines generally.

Dear  
Mr. Edison

Office of  
Joe Weber  
1215 Broadway, New York

10/20/11

Thomas A. Edison Co.  
Orange N.J.

Gentlemen

OCT 21 1911

will you

Kindly inform  
me if you have seen  
or know of anything as a storage  
battery for aeroplanes.

I think the storage battery is too heavy  
for aeroplanes but is all right to  
light them

I should very much  
like to hear of your  
advances for the  
above information

Very truly yours  
Maurice S. Rhone

Telephone  
214 Madison St.

**Edison General File Series  
1911. Banking (E-11-07)**

This folder contains correspondence soliciting Edison's opinions, along with a few letters hoping to shape his opinions, regarding banking and currency issues. Included are letters concerning trade, finance, gold supplies, corporate organization, antitrust policy, currency reform, and economic prosperity. Some items discuss the central bank debate. Most of the letters were written in reaction to newspaper and magazine articles, including Edison's *Saturday Evening Post* interview with Roger W. Babson entitled "Our Foolish Panics."

Less than 10 percent of the documents have been selected. The selected items contain Edison's reply in the form of marginalia.

Union Hill N. J.

Jan 6/11

Thomas Edison

JAN 11 1911  
Dec 1/10/11

Dear Sir

No doubt you are pestered daily  
with all kinds of letters but as  
my letter to you is not written to  
you for charity but only for an  
honest opinion of your idea  
regarding an honest and permanent  
investment of \$15,000 I apply to you  
for information as I take you  
for a person whom I know  
would give his best opinion as  
regards an investment in one of  
your companies, as I am a general  
practitioner of 24 years standing and  
having by hard work saved the above  
amount and not being well enough  
posted as regards good investments  
I take this liberty to ask you to  
tell me where and in what I  
can safely place my money where  
it will pay me 7 or 8% or even  
less for a permanent investment.  
I do not desire speculative stock  
but only such as will pay me an  
income which is safe and  
permanent as I know you would  
not give me this information unless



(2)

writing I would be pleased to call upon your Secretary if you so desire for to get - ~~that~~ information as I am sincere and as a man upon my honor only desire this information - for myself as above stated. I will deem it a great favor if you would accommodate me if for any reason it can not be done I hope you will excuse me for sending this letter to you as it was written in all Sincerity

Respectfully

Dr. W. F. Radue

TELEPHONE 483 UNION

Dr. W. F. Radue

4833 HUDSON BOULEVARD

OPPOSITE FULTON ST.

UNION HILL, N. J.

HOURS  
DAILY 8 A. M.  
12 TO 1:30 P. M.  
& 7 TO 8 P. M.  
SUNDAY & HOLIDAYS EXCEPTED

[ATTACHMENT/ENCLOSURE]

Ed. Nord

(January  
10,  
1911)

Say =

Anything that pays over  
5% interest is in my  
Opinion risky = My advice  
is Either go down to JP  
Morgan & ask them to buy  
you the best & safest Railroad  
bond that pays 5% or  
buy a real Estate Mortgage  
on my City property  
paying 5% -

J. A. Edwards

906

SIXTY-FIRST CONGRESS.

|                            |                            |                      |
|----------------------------|----------------------------|----------------------|
| EDWARD EVERETT, N. Y.      | CHANDLER                   | FRANK B. PULLAR      |
| HENRY FERRISS, MISS.       | FRANK B. PULLAR            | GASTON GLASS, N. C.  |
| GEORGE F. HENRY, PA.       | GEORGE F. HENRY, PA.       | JOHN W. HENRY, N. Y. |
| EDWARD A. HUGHES, CAL.     | EDWARD A. HUGHES, CAL.     | JOHN W. HENRY, N. Y. |
| JOHN W. HENRY, N. Y.       | JOHN W. HENRY, N. Y.       | W. H. HANCOCK, N. H. |
| JAMES H. HANCOCK, N. H.    | JAMES H. HANCOCK, N. H.    | W. H. HANCOCK, N. H. |
| FRANK E. GILLESPIE, ILL.   | FRANK E. GILLESPIE, ILL.   | W. H. HANCOCK, N. H. |
| FRANK E. GILLESPIE, ILL.   | FRANK E. GILLESPIE, ILL.   | W. H. HANCOCK, N. H. |
| CHARLES H. HILLIARD, N. Y. | CHARLES H. HILLIARD, N. Y. | W. H. HANCOCK, N. H. |
| JAMES JONES, IOWA          | JAMES JONES, IOWA          | W. H. HANCOCK, N. H. |
| WILLIAM G. BARKER, ILL.    | WILLIAM G. BARKER, ILL.    | W. H. HANCOCK, N. H. |
| WILLIAM G. BARKER, ILL.    | WILLIAM G. BARKER, ILL.    | W. H. HANCOCK, N. H. |

HOUSE OF REPRESENTATIVES.

COMMITTEE ON BANKING AND CURRENCY.

WASHINGTON, D. C.

*Also 7/13/11*

*finance is entirely out of my hands, I do not want to be responsible with it, there are about 48 million persons who know all about it, I am going to be in charge of it.*

*W. Williams*

PERSONAL.

Thomas A. Edison, Esq.,  
Orange, N. J.

My dear Sir:-

It is a rare treat to read such statements as those contained in the last issue of the SATURDAY EVENING POST as coming from you. Oh that we had more such business men with the time and inclination to do some good old fashioned thinking! But then we would have such a world as Plato wished for, i.e., one in which all rulers were philosophers.

I am mailing under Representative Gillespie's frank my own views on this subject which Mr. Gillespie incorporated in his recent speech made in Congress. The chief characteristic of the European central banks is their freedom from legal fetters. If we wait for Congress to act they will give us a plan which, as you say, will be defective, and such an institution would be continually going to Congress for the removal of this and that restriction, and thus keep the bank in politics for all time to come. I write advisedly on this for I have discussed the subject with a majority of the members of the National Monetary Commission and the House committee on banking and currency.

It is my purpose to organize a company to promote such a head to our credit system and wish to associate you in the movement. The funds necessary to carry it out are of small moment compared with the personal of the organizers, for it can be made self-sustaining from the start. We should proceed as follows:

- 1st. Select a few organizers whose names would inspire the confidence of our business men in every section.
- 2nd. Draft a charter which we shall ask Congress to give us.
- 3rd. Choose the names we propose to submit to the President for his appointment to the first executive offices.
- 4th. Select two of the best business men in each State to become director and alternate director of their respective States for the first 5, 7, 8, 9 and 10 years.
- 5th. Insert a clause in the charter of the promoting company prohibiting its stockholders, officers, directors and agents from owning any of the stock of the central bank stock during the existence of the promoting company.

T. A. F. 2.

6th. Proceed to the distribution of the promoting company's options to purchase the central bank stock at par for cash. As to the details of my modus operandi I would state that we could use the proceeds to be derived therefrom in a manner and for a cause which would do more to gain us the confidence of the public than anything we could think of. I will go into the detail of that if you are interested in the subject.

My address is 515 Bond Building, Washington, D. C.

Sincerely yours,

*R. C. Michelson*

9012

W. A. SOMERS  
VALUATION OF REAL ESTATE  
142 BROADWAY  
NEW YORK

Your seed -  
It is certain, that basing our wheels  
financial structure on gold as a  
commodity is wrong. I may as that we  
shall have to return to banks  
of say 30¢ commodity value to  
mean the unit of total value to  
be determined by the government  
bureau of standards  
to issue money based  
on what you say about gold  
and its use as money, and that its  
use is dangerous, and believe that it  
can be easily and scientific-  
ally avoided.

Mr. Thos. A. Edison,  
Llewellyn Park,  
N. J.

Dear Mr. Edison:

I am very much interested in what  
Cosmopolitan for February, especially  
and its use as money, and believe that it  
use is dangerous, and believe that it  
can be easily and scientific-  
ally avoided.

I am therefore sending you a copy of a report  
made as a result of a discussion in a little neighborhood club  
at meetings held the summer of 1894, which may interest you  
because of the similarity of ideas, and because these meetings  
were held some seventeen years ago.

Yours very truly,

W A Somers

*Pads*  
Art Calendars

Calendar Pads  
Blotters  
Fans

Transparent Window Signs



Souvenir Post-Cards

Local View Post Cards  
made from your  
own Photographs  
Holly Greeting Cards

GEORGE P. HOUSTON

Fine Art Publisher

514 Main Street Cincinnati, Ohio, November 20, 1911<sup>90</sup>

Mr. Thomas A. Edison,  
Orange, New Jersey.

Dear Mr. Edison:-

I have read with interest your recent interview in  
the New York Times.

Will you please give me names and addresses of a  
number of German Banks who investigate and finance inventions and  
all the other information regarding this subject you can or will me  
how to obtain same.

Please tell me where I can get the *Forest Syrian*  
Asphaltum. I noticed it mentioned in "Thomas Edison, His Life  
and Inventions."

Thanking you for these courtesies,

Very truly yours,

*(Miss) Nellie Shaw Houston*

*Nearly all the  
great German banks  
are promoting  
banks  
Have your address  
of Forest Syrian  
which is being  
asphaltum from  
E*

Washington Dec 17 1911  
South West 17 Dec. 1911

M<sup>r</sup>. Thomas A. Edison  
Dear Sir,

White Crochets  
To get into literature  
relating to Corporations  
Stone in England & Rip  
down the English  
speculations of  
Criticable  
James G. Thompson  
Dred

On the 12th inst. the  
reported your condemnation of the  
Shoeman anti-trust law  
of which the business world  
aware, just as the business world  
would become aware of the danger  
involved in the Shoeman silver purchase  
act, which its sponsor could defend  
only on the plea that he was between  
the devil & the deep sea and

was much improved by your reported  
purpose to study out an act to  
be substituted for the discredited  
Shoeman law. Such a labor, if it  
realized your intent - would earn the  
gratitude of all thinking men in  
the country. Your work will extend  
references to a variety of sources  
and, at the risk of being thought  
obtrusive, I beg to submit to your  
consideration the Co-operative Societies  
of England - & the law under which  
they flourished. The beginning  
of this enormous system was the  
purchase of £300,000 worth of groceries  
by a few poor weavers in Rochdale.  
James G. Thompson

The retail establishments own  
the stock of the Wholesale Co.-  
the extent of whose operations  
may in time far exceed that  
of any business organization  
now in existence. It is a  
good & beneficent institution,  
known & approved as such; it  
has the support of the common  
people whom it benefits, and is  
not to its injury - is ever likely  
to be attempted by parliament.

I have been a coöperator since  
I was 21. & have never missed a

chance to urge the advantages  
of coöperative combination,  
or bear an active part in same  
when my scant leisure & means  
permitted. It is almost 30 years  
since I was auditor (honorary)  
of a small coöperative concern  
of which the late Mr. Spencer Stark  
was president, & his partner, Mr.  
George Peter Peabody, was one  
of the directors.

Should you ever wish to help in  
a coöperative undertaking of large  
scope, - pray command me

Most respectfully yours  
W. F. Cuo.



**Edison General File Series**  
**1911. Battery, Storage - General (E-11-08)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery. Included are numerous items in Edison's hand, including a list entitled "Uses for Edison Battery"; its typed draft, prepared by Miller Reese Hutchison, bears marginalia by Edison. Also included are notes, draft correspondence, and interoffice communications relating to experiments, cell tests, the procurement of equipment and supplies, advertising, and sales and administrative practices. Other items pertain to commercial development in foreign markets, including a report concerning Russia by foreign representative Maurice E. Fox. Some of the letters discuss the use of batteries in delivery wagons, electric bicycles, and telephones. There is also correspondence with the Hooker Electrochemical Co., the National Hydro-Carbon Co., and the Niagara Alkali Co. relating to Edison's investigation of a lower-cost substitute for German potash. In addition, there are numerous unsolicited requests for information about the battery, some with marginal notes by Edison. A sample of these letters has been selected. Among the correspondents are Edison associates William G. Bee, Frank L. Dyer, Ignacy Goldstein, and Walter E. Holland. Other correspondents include electrical engineers Henry M. Byllesby of Chicago and W. Hibbert of the London Polytechnic; Arthur I. Clymer, an investor in the Edison Storage Battery Co.; and Theodore N. Vail, president of the American Bell Telephone Co.

Approximately 80 percent of the documents have been selected. The items not selected consist of unsolicited correspondence, a translated copy of "Alkaline Iron Nickel Accumulator," and an address delivered by J. A. Montpellier at the International Congress of Electrical Applications in Turin, Italy.

1/2/11

Dr. Goldstein:

Here is a sample of Detroit river water. Will you kindly test same & advise whether it can be used in Edison Batteries.

W. G. Bee

W. C. Anderson  
Anderson & Company Ltd  
Detroit Mich

1/2/11

*Rev - Ed - Howard*

P.C.M. 20210

Form 27.

**KENTUCKY & INDIANA BRIDGE AND RAILROAD CO.**

KENTUCKY AND INDIANA BRIDGE,  
LOUISVILLE BELT LINE,  
NEW ALBANY & PORTLAND FERries.

*Ans 1/10/11*

Louisville, Kentucky, Jan 7 1911.

*I do not think that  
the Gallatin is deep  
enough to be used  
for commercial  
now for your purpose  
it is a small  
dam*

Thomas A. Edison, Esq.  
Orange, N.J.

Dear Sir:-

I have in hand the developing of about 40,000 horse power by water, contemplating the use of low head turbines. There will be probably three months of each year in which this amount is not available and must be supplied by an auxiliary power plant.

With a view of storing electrical power during the period when an excess of the required amount is available, will it be possible to do so by employing your new nickel storage battery, in lieu of the general practice of a separate steam plant?

I fully appreciate the novelty of such a scheme on as large a scale as outlined and the magnitude of the undertaking. Moreover, I think you will agree with me, that the auxiliary steam plant is a wrong idea and bad practice, if by using a storage reservoir, during periods of excess, it can be eliminated.

With my limited knowledge of your new battery, it has occurred to me that this may be done by multiplying the cells; though I have no way of knowing except by your advice.

Awaiting the courtesy of a reply for which I thank you in advance, I remain,

Yours Respectfully,

*John P. Wilson*  
Resident Bridge Engineer.

Dict.

J.B.W./O

*Am 1/16/11*

Thos A Edison, Esq/  
Menlo Park  
N.J.

Dear Sir:

*say these lanterns have been  
made used in Germany - The Edison  
Co intend act some time  
in the future to make some*

I am only an old time telegraph operator, but an idea  
occurred to me, and as they say ideas are some-times valuable, I  
concluded to write it to you, and I am sure if there is anything in it

*unfortunately such use cannot  
be patented*

you can get it out. And as you, yourself, are an old time operator  
I am sure that you would be willing to give me a small share if it  
should be that anything can be made on it.  
It is simply this: Construct a small storage battery, or arrange any  
kind of a battery to be worn as a belt by a railroad switchman, or  
trainman, that will make a light of the incandescent kind, equal to  
an ordinary switchman's lantern, so that a switchman could carry in  
his pocket, a red and a white bulb attached by cord to his belt  
battery, and by a touch of his finger her could out in his light,  
and give the ordinary switchman's signals, at any time.

I think if something like this can be done it would save an enormous  
expense in Railroad lanterns and signal oil.

If anything in it go ahead and get it out, and any old thing will  
help me, as I am not able to even have a patent gotten out.

Very truly yours,

*A. S. Page*

Tel. Operator D F & I B y  
Care Wellington Hotel,  
Napoleon, Ohio.

Jan. 14, 1911.

Mr. Goldstein:

I send you herewith two hard rubber composition gland caps, one red and one black. At your earliest convenience will you please determine whether either of these contain adulterants which are soluble in Standard Renewal Solution (25% KOH & 15 g. LiOH per liter) and the relative amount of solubles in each.

Do not break these gland caps, but, after soaking them as long as you think necessary for the test for solubles, return them to me for physical tests.

W.E. HOLLAND.

W.E.H.

Hydro-Electric Power Co.

INCORPORATED 1907

Theresa, N. Y.

DIRECTORS:  
F. L. RAYWAY, PRESIDENT  
JAMES D. YARD, VICE-PRESIDENT  
Geo. P. SHAWARD, MGR. AND TREAS.  
CHAS. W. BULFINCH  
W. L. ROSE

*Ans 2/17/11*

*Feb. 17th, 1911*

Thomas A. Edison Esq.  
Orange, N. J.

Dear Sir:-

We have confronting us a proposition

which perhaps you can aid us in solving.

For a period of about three months in the dryest part  
of the season there are about one to four hours a day  
frequently that our water supply is insufficient to  
operate our plant. Thought it possible that some  
of an electrical storage could be used for reserve current  
charged when the water was flowing in sufficient quantity  
to produce surplus energy to be stored and used during the  
few hours of the day when the water supply was inadequate  
for our requirements.

Will you kindly advise us if such an  
appliance can be gotten and from whom it can be procured, if  
such there is. Thanking you for the favor we are

very truly yours,

Hydro-Electric Power Co.,

*Geo. P. Shaward*  
Sec'y.

*The storage battery will  
do what you want but  
the cost of dynamo  
at Theresa is rather  
large if you have  
a small plant  
it might pay  
to install  
power do you  
want*

Eckles, James

Dec 21/1891

Dear

You come down here with the  
plans to ~~bring~~ only call to manufacturing  
to go into these vehicles <sup>from Michigan</sup> ~~Michigan~~ <sup>to go</sup> 6<sup>th</sup> 1911

Mr. Thos. A. Edison, up the small trade  
we are working. <sup>Change. N. P.</sup>  
for sparking a brightening and mobility  
of <sup>the</sup> ~~the~~ this is ready here might

be a <sup>Disaster</sup> ~~Disaster~~ for you to do  
in our City Government here. It has been  
my misfortune to <sup>be</sup> ~~be~~ let out from the  
position that I have held as Secretary  
of the Water Board, for the past eleven  
years, and being just at time of the year  
when this town like all the other towns  
situated along the Lake & Rivers, are extremely  
dull, I made the remark to my Wife  
this morning that I would again write  
you and ask you as I did about three  
years ago relative to an Agency of your  
Storage Battery, and which at that time  
you said was not ready, now Mr  
Edison, you know just how a man  
feels when he is out of employment  
after having been at the grind ever since  
he was fourteen years old, so if you can

see your way clear to give me a trial.  
Either as agent for your Storage Battery,  
or in the Cement Business, in one  
of our western towns, as neither my  
Wife or myself are in any way tied  
to Port Huron. why I wish you <sup>would</sup> give me  
a trial and I will try and make good,  
in what ever venture you may propose.  
awaiting I hope a favorable reply  
from you. I remain

Very Respectfully Yours  
James Eckles



Hand - Ry

DIRECTORS:  
F. L. SANFORD, president  
JAMES B. VORSE, vice-president  
Geo. F. BROWN, secy. and treas.  
CHAS. H. BROWN  
W. L. REED

**Hydro-Electric Power Co.**  
INCORPORATED 1907  
**Theresa, N. Y.**

Feb. 15th, 1911.

Thomas A. Edison, Esq.  
Orange, N.J.

Dear Sir:-

Yours of the 7th instant at hand.

We would want storage for from 100 to 150 horse power.  
What would be the total cost installed of the outfit  
required for 100 H.P. and how much for 150 H.P.?

Awaiting your reply we are

Very truly yours,

Hydro-Electric Power Co.

*Geo. F. Brown*  
Sec'y.

FEB 16 1911  
Ans 7/18/11

If you want to  
store 100 HP for 10 hours daily  
this would be 1000 horse  
power hours, it would  
cost probably ~~35000~~ ~~40000~~  
which I apprehend is entirely  
out of the question -

Paul - Ed Hand

7/23/11

Hallam <sup>Pyramid</sup>  
<sup>50th</sup>

How about the  
relay for working  
the Bell for  
our Fuller on  
battery base

you got it  
working  
E

*S. Battery*

March 7th, 1911.

EDISON BATTERY - STANDARD PRACTICE DATA.

EDISON BATTERY OF 40 "A6" CELLS OR 60 "A4" CELLS.

Use: In most pleasure vehicles and in trucks up to 1 ton capacity.

Capacity: 100 to 200 miles per charge in pleasure cars, depending on the road conditions, speed, etc., or 40 to 50 miles in truck service.

Normal Full Charge: 21 kilowatt-hours theoretically, ---but actually it is 20% or more, above this, depending on the efficiency or inefficiency of the charging apparatus.

EDISON BATTERY OF 60 "A6" CELLS.

Use: In trucks of 1 to 2 tons capacity.

Capacity: 1-ton, 50 to 60 miles.  
1-1/2-ton, 40 to 50 miles.  
2-ton, 35 to 40 miles.

Normal Full Charge: 31.5 kilowatt-hours plus percentage lost in the charging apparatus.

EDISON BATTERY OF 60 "A8" CELLS.

Use: In 2 to 3-1/2 ton trucks.

Capacity: 2-ton, 50 to 60 miles.  
3-ton, 40 to 50 miles.  
3-1/2-ton, 35 to 40 miles.

Normal Full Charge: 42 kilowatt-hours plus percentage lost in the charging apparatus.

COST OF CHARGING CURRENT.

Varies from 3 cents to 10 cents per kilowatt-hour, depending upon the locality, quantity used, time of day used, etc.

Mr. Dyer:

Is this specific enough? I cannot give the rates for different localities.

I send you an extra copy for mailing

W. E. Hubbard

Battery - equip

*File  
Storage Battery*

*File*

Mar. 29, 1911.

Mr. Edison:-

I am sending herewith the report from Mr. Thomas and also the sample of the first batch of Flake put through with your new process. It looks very favorable, although our Flake is not quite as flat as that which you separated at the Laboratory.

We are going right ahead and trying out all kinds of stunts in order to get the best possible results. Mr. Thomas seems to think that 10 hours is too long and he is taking a sample every 20 minutes after 8 hours.

RAB/JJB.

BS-TAB

Write 4/10/11

Niagara Alkali Co  
Niagara Falls NY

I am interested in your cell.

I am now buying Sodium hydroxide

+ Chlorine in drums -

Give me some figures, I want  
to reduce my costs.

J. A. Carlson

[ATTACHMENT/ENCLOSURE]

METALLURGICAL AND CHEMICAL ENGINEERING.

103

**Make Your Own Caustic and Chlorine**  
with the most improved,  
by far the most efficient  
and easily the  
simplest

**ELECTROLYTIC  
CELL**

For either Caustic,  
Soda or Potash.  
Leased to Consumers  
on Royalty.

We'll Meet Your Requirements.

Five Years Have  
Given Us the  
Ability.  
Write.

**NIAGARA ALKALI CO.**  
NIAGARA FALLS, N. Y.

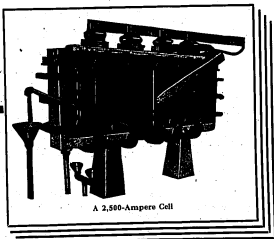
[ATTACHMENT/ENCLOSURE]

Write same letter to  
Hooker Elec Chemical  
Co 40 wall st  
NYork —  
E

[ATTACHMENT/ENCLOSURE]

METALLURGICAL AND CHEMICAL ENGINEERING.

59



A 2,500-Ampere Cell

Electrolytic Production of

# CHLORINE

By

## The Townsend Cell

(Licenses Granted in all Countries)

Low Initial Cost

Low Cost of Maintenance

Bleach Generating Plants for Paper Mills

Chlorination of Ores

Alkali Plants for Soap and Textile Mills

**Caustic Soda**

76 Per Cent Electrolytic

**Bleaching Powder**

High Test

SULPHUR CHLORIDE

**Hooker Electrochemical Company**

Forty Wall Street, New York City

Plant: Niagara Falls, N. Y.



H. D. RHM, Pres. and Gen. Mgr.

E. M. SERGEANT, Vice-Pres. and Asst. Gen. Mgr.

F. O. GEYLER, Sec. and Treas.

# NIAGARA ALKALI CO.

(INCORPORATED)

Electrolytic Caustic Potash, Solid and Liquid,  
Chlorine and By-Products,  
Muriatic Acid

Office and Factory  
Niagara Falls, N. Y.

Telephone Bell 135

Cable Address "Niagalk"

NIAGARA FALLS, N. Y. 4/12/11.

Mr. Theo. A. Edison,  
Orange, N. J.

Dear Sir:-

*Am 4/20/11*  
*I am using several hundred lbs*  
*Electrolytic soda also 3 Potash &*  
*in addition 300 lbs of Chlorine in*  
*cellulars - have not requiring*

We note your ~~specimen~~ <sup>order</sup> of April 10th. in regard to our electrolytic cell. The ~~most economical form~~ <sup>most economical form</sup> ~~which~~ <sup>which</sup> ~~is~~ <sup>is</sup> constructed is of a size ~~and~~ <sup>and</sup> permits of normal operation at 3000 amperes with about 3.75 volts. These cells operate at an efficiency which varies between 95 and 97% ampere efficiency and about 59 to 60 energy efficiency. Cost of construction per cell complete is about \$500.00 including anodes. The caustic liquor is taken off at a concentration of from 13 to 16%, giving very satisfactory evaporating costs. Chlorine gas ranges from 97 to 98% and the hydrogen gas is free from electrolytic oxygen. We are using our chlorine and hydrogen by direct combustion under our own patent ~~for~~ manufacture of hydrochloric acid, and we are making only caustic potash, though the cell is in operation in Austria and Germany for both caustic potash and caustic soda.

The terms upon which we would dispose of the right to use our cell would of course depend upon the number of cells to be used and the purpose for which same would be used.

The writer will be very glad to take the matter up with you in person at any time you may decide that the above statements cause you to be sufficiently interested to make further investigation.

In the meantime, we are expecting to make considerable caustic soda during the coming year as well as caustic potash, intending to alter-nate between the two as the market dictates, and the Electro Bleaching Gas Co. of 24 East 21st. St., New York City. are utilizing our chlorine gas for compressing same into liquid, which they sell in steel cylinders containing about 100# of 100% chlorine each.

We are also manufacturing bleaching powder containing from 37 to 39% available chlorine and in case you are interested in any of these products we shall be very glad to receive your specifications from time to time, and any inquiries will receive our prompt and careful attention.

Very truly yours,  
NIAGARA ALKALI CO.

*H. D. RHM*  
PRES. & GENL. MGR.

HDR:MAB

50-  
TAB

Phoned  
August. 4/12/11  
9.30 A.M.

Your 1753 loads over  
of grain. Is this an  
experiment if it is a  
regular <sup>we</sup> cant use  
it as tubes will  
burst in time.

Your loading weights are  
running high on regulars  
& are getting dangerous

Rev. Roy

We are not certain  
as to the Equations  
if we'll be some time  
Mr. I should like to see you the  
before we leave  
Edison Storage Battery Co.,  
Orange, N. J.  
APR 19 1911

Dear sir;

I am at the present  
time running a series of tests on  
the Edison Storage Battery for my  
graduation thesis at the Armour  
Institute of Technology.

I have been unable, however,  
to obtain the equations of the  
chemical reactions which take  
place during charge and discharge.

It would add very much to  
the value of my Thesis, which will  
be kept in the library, if I could  
get these equations.

If you should deem it advisable  
to send me the equations I will  
be very pleased to include those  
in my report.

Thanking you in advance for  
whatever information you may  
give me on the matter, I am

Yours Very truly,

J. H. Stuehrle

3032 So. Park Ave.  
Flat 50. Chicago.

BS-TAE

H. D. RUIHM, Pres. and Gen. Mgr.

E. M. SERGEANT, Vice-Pres. and Asst. Gen. Mgr.

F. O. GEYLER, Sec. and Treas.

# NIAGARA ALKALI CO.

(INCORPORATED)

Electrolytic Caustic Potash, Solid and Liquid,  
Chlorine and By-Products,  
Muriatic Acid

Telephone BR1135

Cable Address "Niwalk"

Office and Factory

Niagara Falls, N. Y.

NIAGARA FALLS, N. Y.

4/21/11

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Your esteemed favor of April 20th. at hand and contents noted. We beg to thank you for the information therein contained. Kindly advise us if quantities named are per day or week. With amounts named by you we hardly believe it would pay to install cell, but will be glad to advise definitely later on. Potash and Soda made by this or any other cell, except Mercury cathode would contain some chlorides. Please advise if this is objectionable.

Very truly yours,  
NIAGARA ALKALI CO.

*H. D. Ruihm*  
PRES. & GENL. MGR.

HDR:MAB.

*Gay*  
*The quantities are daily*  
*E*

*Having  
let these my letter  
to him  
Apr 21/11*

Small amount

To A. J. Clymer  
Van Hook, Ohio

Answered 4/27/11  
Harry Winston

Clymer letter sent to W. J. Bee

Our capacity has increased  
from 1600 calls weekly  
from Jan to 2200  
in April - in 3 weeks  
will be 2700 - we are  
still behind on orders  
Today about 13500 -  
+ we are sure we are  
breaking even ~~at~~

I am now making ready  
to increase capacity  
to 1000 calls daily

Beach has only one  
car running on 28th  
st. They fixed up some

2

old horse cars but  
I refused to sell them  
because as realtors  
were bad - They rented  
lead batteries at exactly  
4 times the ~~cost of~~  
running expenses  
of ours.

Beach has 3 cars  
on a Washington line  
2 at Salisbury VA  
1 large car which  
has been running on  
a branch of the Erie  
road, superseding a 1000

3

drawn Coain —  
He has prospects which  
are extremely good —

Σ

Bat-5en

4/27/11

HOOKER ELECTROCHEMICAL COMPANY  
NIAGARA FALLS, N. Y.

PATENT DEPARTMENT

*Day that while I can use  
one ton of Caustic Soda per day*

April 28, 1911.

*I can only use 1/4 of the Chlorine*

Thomas A. Edison, Esq.  
Orange, N. J.

*just now but expect to be  
able to use the whole in the fall  
I now buy Chlorine in cylinders  
from Arnold Hoffman but*

Dear Sir:

Referring to your inquiry of the 10th inst we have been advised by Mr. J. C. Jessup of our New York office that your requirements are 1000 lbs of Chlorine weekly and one ton of Caustic Soda

*The price of each is more  
than I can stand*

One 2500 Ampere Tombsend Cell operating 24 hours daily at 4.4 volts and 93% Ampere efficiency average

Requires 14-3/4 H.P. D. C.

Produces daily  
162.5 lbs Chlorine  
183 " Caustic Soda

Requires 275 lbs Salt (NaCl) in the form of brine.

*You TAE*

The Cathode Liquor contains approximately 150 grams of NaOH and 190 " of NaCl per liter

NOTE:

On evaporating this Caustic Soda Solution to a point where it contains 50% of NaOH the salt is all recovered but about 2% and returned to the process.

HOOKER ELECTROCHEMICAL COMPANY  
NIAGARA FALLS, NEW YORK



Thomas A. Edison, Esq.  
Orange, N. J.

Thomas Edison, Esq.

-2-

To produce one ton--2000 lbs of Caustic Soda daily requires eleven - 2500 Ampere Cells which also produce 1788 lbs of Chlorine in the same time so in this case it would be essential to have use or disposal for the quantities of product stated.

Regarding your conditions it would be impractical to operate unless you need the total of both Cell products.

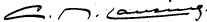
Should you have use for an installation of about the size mentioned and if you will kindly advise us of the quantities required we would be glad to have you advise us further.

Trusting this information may be of interest, we are,

Very truly yours,

HOCKER ELECTROCHEMICAL CO.

CNL/AC





Write ✓  
Titanium Alloy Mfg Co  
1225-26 Oliver Bldg

Pittsburgh Pa

I am making castings of  
Nickel daily, to get them  
soft I use Magnesium  
Will Titanium act in the  
same manner to remove  
oxide etc —

John  
Fitz

Ballou - TAE

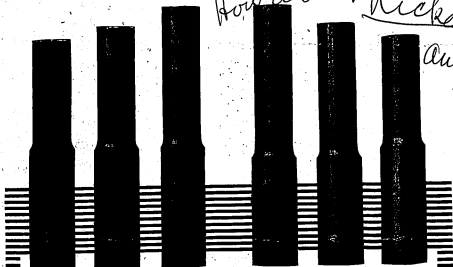
# THE IRON AGE

Published every Thursday Morning by  
David Williams Co., 239 West 39th St., New York

Vol. 87 No. 17.

New York, Thursday, April 27, 1921.

8206 a Year.  
Single Copies, 10 Cents



Test bars of ordinary cast iron. Note the blow holes, the dirt, the coarse grain of the metal. Compare with the other bars illustrated.

Test bars of same metal purified with 1-4 of 1% of Titanium Alloy. Ultimate strength 19.4% greater than that of the untreated test bars.

## TITANIUM

### The Wonder-Working Alloy

Every maker and user of cast iron can profit by studying the above illustrations made from actual photographs unretouched. They prove conclusively that Titanium Alloy is a real wonder-worker.

Titanium Alloy is a combination of the metal Titanium with the best quality iron electrically refined. It is added to the charge in cupola or air furnace. It makes iron of exceptional quality by removing solid and gaseous impurities in a fusible slag. The resulting metal settles more quietly in the mold, makes castings pattern-true and remarkably free

from hard spots, shrinkage cracks, blow-holes, etc. Tensile and breaking strength is considerably increased, while the increase in compressive strength and resistance to wear is really startling.

Titanium Alloy is the cheapest high grade alloy on the market. It increases cost of finished product 25c and upwards per ton.

In steel, Titanium Alloy produces effects even more remarkable than in cast iron. Titanium steel rails are used by largest railroads in the country.

Every Maker and User of Iron and Steel Should Have Booklet No. 20

### TITANIUM ALLOY MANUFACTURING COMPANY

Operating under Royal Patents

CHAS. V. SLOCOMB

Special Agent

1225-26 Oliver Bldg., Pittsburgh, Pa.

Canadian Agents

N. J. MORGAN & CO.

Montreal

Processes and Products Fully Patented

British Agents

T. ROWLANDS & CO.

Sheffield, Eng.

Pacific Coast Agents

SCULLS & SMITH CO., Los Angeles, San Francisco, and Portland

B5-622

H. D. RUMM, Pres. and Gen. Mgr.

E. M. SERGEANT, Vice-Pres. and Asst. Gen. Mgr.

F. O. GEYLER, Sec. and Treas.

# NIAGARA ALKALI CO.

(INCORPORATED)

Telephone Bill 135

Electrolytic Caustic Potash, Solid and Liquid  
Chlorine and By-Products  
Muriatic Acid

Office and Factory  
Niagara Falls, N. Y.

Cable Address "Niagalk"

NIAGARA FALLS, N. Y.

May 3rd. 1911.

*Ans 5/10/11*

*We purchase our Electrolytic Potash from German for it is practically free from chlorides, & we would be glad to have you quote on supply as well as the soda.*

Mr. Thos. A. Edison,  
Orange, N. J.

Bear Sir:-

Your esteemed favor of April 29th. at hand and contents noted. Beg to thank you for your further information. We are quite sure that so small a plant as you mention would not pay unless your conditions were extremely favorable in other lines than the actual electrolysis and extremely unfavorable as to purchasing supplies of chlorine, caustic soda and caustic potash.

We are at present manufacturing about as good electrolytic caustic potash and caustic soda as is produced in the world and could name you very close prices on both of these materials.

We are putting up liquid chlorine in connection with Electro Bleaching Gas Co., 24 East 21st. St., New York City. and can ship this material 100% chlorine in steel cylinders.

We are asking the Electro Bleaching Gas Co. to take this matter up with you and see if they cannot make you a low enough price on the liquid chlorine to justify your using same instead of producing your own.

We should be very glad indeed of course to furnish our cell for your plant, but do not think you will eventually decide to install plant after you get into the matter.

Our technical department will make up an estimate on such a plant as far as can be made from the information available and same will be submitted for your consideration.

Very truly yours,  
NIAGARA ALKALI CO.

*H. D. Rumm*  
PRES. & GENL. MGR.

HDR:MAB.

H. M. Byllesby & Company

ENGINEERS  
206 South La Salle Street  
CHICAGO

May 9, 1911.

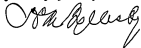
Thomas A. Edison, Esq., *Your address before the University of Pa is very clear & very good, & am quite surprised that you have such a facility = ~~to~~ ✓*  
Eliwellyn Park,  
Orange, N. J.

My dear Mr. Edison:-

I am sending you under separate cover copy of an address which I delivered, principally extemporaneously, at the University of Pennsylvania on April 7th, and which might interest you.

I shall feel very much honored if you can find the time to read it and would be glad to know, if you do read it, how it strikes you.

Very truly yours,



H.M.B.

[ATTACHMENT/ENCLOSURE]

Ed. Ward

Ans  
6/3/1911  
Ed. Ward

I also want to say to you  
that you are missing a great  
opportunity that you do not  
come down to Orange &  
let me explain to you that  
recent developments in my  
new storage battery is  
such that a new epoch  
in the Electric Car  
is now starting & those who  
investigate thoroughly  
will reap the benefit  
I believe I know as well as  
anybody how things will  
turn out as a business  
proposition. I have read the proceeds  
of your last convention & am further  
surprised - Ed. Ward

85-8

H. D. RUMM, Pres. and Gen. Mgr.

E. M. SERGEANT, Vice-Pres. and Asst. Gen. Mgr.

F. O. GEYLER, Sec. and Treas.

## NIAGARA ALKALI CO.

(INCORPORATED)

Electrolytic Caustic Potash, Solid and Liquid  
Chlorine and By-Products  
Muriatic Acid

Office and Factory  
Niagara Falls, N. Y.

Telephone Bill 135

Cable Address "Niagalk"

NIAGARA FALLS, N. Y. May 13th. 1911.

Our file #1846.

Mr. Thos. A. Edison,  
Orange, N. J.

MAY 13 1911

Dear Sir:-

Further referring to the question of using an electrolytic cell of our type, we beg to advise you of the following estimate on plant for manufacturing 1000# of caustic soda or proportionate amount of caustic potash per day:-

### COST OF PLANT.

|                                                                       |                  |
|-----------------------------------------------------------------------|------------------|
| Buildings                                                             | \$5,000.         |
| Cell room equipment (7 cells including pipe lines, copper bars, etc.) | 5,000.           |
| Electrical machinery                                                  | 2,000.           |
| Evaporator equipment, tanks, boiler, etc.                             | 4,000.           |
| Total                                                                 | <u>\$16,000.</u> |

### YEARLY EXPENSES IN MANUFACTURING CAUSTIC SODA.

|                                            |                  |
|--------------------------------------------|------------------|
| Salt consumption 580,000# @ \$2.80 per ton | \$ 810.          |
| Coal " 500,000# @ 3.00 " "                 | 750.             |
| Power 70 H.P. @ 35.00 " H.P.               | 2,450.           |
| Labor                                      | 6,000.           |
| Supplies                                   | 250.             |
| Interest 6% on \$16,000.                   | 960.             |
| Amortization                               | 2,000.           |
| Royalty \$1.00 per day and cell            | 2,450.           |
| Total                                      | <u>\$15,670.</u> |

### PRODUCTION.

|                                                 |                  |
|-------------------------------------------------|------------------|
| 370,000# of caustic soda (75%) @ \$2.10 per lb. | 7,750.           |
| Cost of manufacturing 315,000# chlorine         | <u>\$ 7,920.</u> |

1 lb. of chlorine = 2-1/2#.  
The above estimate is based on caustic as liquor of 48° Be. If the caustic liquor should be evaporated down to solid, the additional cost per year would be about \$500.00.

For manufacturing caustic potash in the same size plant the estimate showed the following:-

Niagara Alkali Co. To Mr. Thos. A. Edison. Page 2 Date 5/15/11.

|                                                    |                    |
|----------------------------------------------------|--------------------|
| Consumption of muriate of potash 740,000# @ \$2.40 |                    |
| per 100#                                           | \$17,800.          |
| Coal consumption 820,000# @ \$3.00 per ton         | 1,230.             |
| Power, labor, supplies, interest, amortization,    |                    |
| royalty                                            | 15,149.50          |
|                                                    | <u>Total</u>       |
| Production of 560,000# caustic potash @ \$5.00 per | <u>\$34,179.50</u> |
| 100#                                               |                    |
| Cost for manufacturing 315,000# of chlorine        | <u>28,000.00</u>   |
| 1 lb. = 2¢.                                        | <u>\$ 6,179.50</u> |

from which you will notice that allowing \$2.00 per ton for coal and \$25.00 for power, and figuring caustic soda at only \$2.10 per 100#, you can manufacture chlorine gas at 2-1/2¢ per pound. When you make caustic potash, even with the higher royalty which it would be necessary for us to charge for this purpose, you can make the chlorine for 2¢ per pound. Should these figures prove of interest to you the writer will be glad to take the matter up in person regarding final negotiations.

Very truly yours,

NAGARA ALKALI CO.

PRES. & GENL. MGR.

HDR:MAB.

BS

Miller —

I am offering <sup>Electrolytic</sup> Carboric acid by  
an opposition concern at Niagara  
falls at 1 cent and 64 hundredths  
706 falls ~~per~~ I have a  
sample here with analysis —  
When you come up bring  
Copy of ~~any~~ analysis  
of your soda —

Σ

Phoned

5/18-3

pm  
To J. W. M.

W. E. P.



RS-TAE (?)

NATIONAL HYDRO-CARBON COMPANY  
 (INCORPORATED)  
 CAPITAL \$3,500,000  
 OWNERS AND PRODUCERS  
 HIGH-GRADE HYDRO-CARBONS  
 MANUFACTURERS OF AE-ONITE COMPOUNDS

*File  
6/3/11  
Edwards*

GEO. H. MULVEY  
 FIELD MANAGER  
 MUYTON, UTAH.

EASTERN OFFICES  
 HENRY W. OLIVER BUILDING  
 PITTSBURGH, PA.

Myton, Utah.

May 19, 1911.

Mr. Thomas A. Edison,  
 Orange, N. J.

Dear Sir:-

Your favor of the 2nd inst. at hand, and in reply will state that we are in a position to supply what you ask for, Elaterite, Tabbyite or Weidgerite.

I would ask you to take the matter up with our Eastern Office, 2216 H. W. Oliver Bldg, Pittsburgh, Pa., where you will probably be able to come to some definite arrangements.

Very truly yours,

GHM/D

*Geo H Mulvey*

What is the price per ton of Elaterite  
 Fob NY or Salt Lake = I am  
 experimenting with it to find a  
 special use = The sample sent  
 is not elaterite but has the general  
 characteristics I understand Elaterite  
 is a fossil resin & is ~~not~~ saponifiable. This is the  
 case of Elaterite I have from New Zealand OOE

Whereas your statement is not  
responsible;

JCS

... of the ...  
... of the ...  
... of the ...  
... of the ...  
... of the ...  
... of the ...  
... of the ...

Storage Battery testing

May 31st, 1911

Mr. T. A. Edison:-

The box for cooling the A-6 cell is being made at the storage battery works by Fred Pine the carpenter. He promises to have this box down by 2 or 3 o'clock today, Wednesday.

Kindly note that I have allowed for 1/2" currents between the cells and the side of the box. There are two fillers put in on the end of the box to admit of four of these cells being put into a box of this size that will take the 16" fan that you are using to cool off the locomotive batteries in the laboratory.

I mention this in memorandum in the event of your wishing to try this cooling box while I am absent in Washington tomorrow. I will give instructions for the box to be delivered to Harold Smith in the Laboratory as soon as it has been finished.

Jones is making the necessary reversals in the test strip cells to determine as to whether or not the coating we have put on the test strips will break down on reversal. Then the boy who is taking the readings is potting curves of these polarization readings which you can see at any time in the testing room where these strips are being tried out.

MEH/GPW.

# VACUUM CLEANING

Time, Labor and Money Saved. All work guaranteed.

Hand and Electric  
Machines for Sale  
and To Let

NEWTON EXCHANGE  
G. L. HARTSHORNE

318 Cabot  
281 Walnut Street

Newtonville, Mass.

sent  
6/10/11

Mr. T. Thomas A. Edison,

Dear Sir,

The inclosed article of  
of the Electrical Science  
Sat. Transcript.

June 7<sup>th</sup> 1911.  
Say the report is not  
correct we have a one  
Orange horse brought here with  
a small battery which by  
charging ~~the~~ few  
minutes ~~recharges~~ ~~it~~  
current to ~~charge~~ the  
load in the town ~~of~~

Can you tell me where to ~~order~~ ~~buy~~ ~~one~~  
of those batteries which ~~is~~ ~~sent~~ ~~to~~ ~~me~~ ~~in~~ ~~the~~ ~~inclosed~~  
a suite case and has the power to  
run a car, truck, or automobile ~~and~~ can  
be recharged in 3 minutes. What would the  
cost of a small recharging plant be.

A battery like this would be such a help  
to me to run my electric vacuum machines  
(1/6 H.P. alternating motor) as good men are impos-  
sible to get. Thanking you for your trouble  
I remain - your truly,  
G. L. Hartshorne

[ATTACHMENT/ENCLOSURE]

Thomas A. Edison announces that he has perfected a new storage battery for surface cars and trucks which would revolutionize the street traction business. When asked about the success of his storage battery, recently invented, which is now used to run the surface cars on Twenty-eighth and Twenty-ninth streets, Manhattan, he said: "I have done far better than that now, and nothing has come out about it. I have perfected a battery which can be recharged in three or four minutes and which will run fifty or sixty miles without being recharged. The trouble with the first battery was that the recharging took a long time. When charged a car would run all day, but then it took the better part of the night to recharge it and get it ready for the next day. But I have done away with all that. I have now a battery which can be put into a suit case, it is so small and light, and it can run a car, truck, automobile, or vehicle of any kind until the power is used up, and then recharged in less than three minutes, ready for service as before."

"I suppose," said the interviewer, "that one of these new batteries could be used to take a street car over the line once or twice and then run through the recharging station and out again in three minutes?"

"That is it exactly," replied Mr. Edison, "with one exception, or there could be small recharging stations along the line, where batteries might be recharged as much as they needed in a minute or less. The beauty of this battery is that the power can be put into it in small quantities or large without waste of time."

"Mr. Edison told of a truck to which he had attached the battery, which he said would run sixty miles without being recharged, and which can be recharged in five minutes or less."

STATE REGISTER-DIVISION

DS-229



FLOUR, MEAL,  
GRITS BRAN,  
CORN CHOPS

**THE LILY MILL**  
(INCORPORATED)  
**GRAIN AND MILLED PRODUCTS**

WHEAT, CORN,  
OATS, HAY,  
"SNAP" CORN

ROBINSON'S CODE

*Springfield, ILL.*

East St. Louis, Ill. June 9th 1911

Mr. Thos. A. Edison,  
New York, N.Y.

Dear Sir:

I have noticed with pleasure from recent press reports that you have succeeded in producing the light storage quick charging battery that you promised the electrical world some time ago and I sincerely hope it will prove the success that we have all hoped for in recent years.

I am anxious to know if this battery will prove satisfactory for motorcycles for if a suitable battery can be produced I would like to engage in the manufacturing of electric motorcycles which would meet an unlimited demand.

I would like you to write me fully concerning this matter- stating what would be the probable cost of the most practical size batteries for these cycles and greatly oblige,

Yours truly,

*W. A. Keyes*

*I think you can provide a battery which will <sup>with</sup> ~~the~~ work & a <sup>very</sup> ~~good~~ battery on Motor Cycles. Send Catalogue*

*Boston 3-avenues*



# The London Soap Co.

MAKERS OF "BEE HIVE" AND "MAGIC NAPTHA" LAUNDRY SOAPS  
AND FINE FRENCH MILLED TOILET SOAPS

London, Ont.

June 12th, 1891

Mr. Thos. A. Edison,

Orange, N. J.

Dear Sir,-

Enclosed you will find a newspaper cutting which has called my attention to the progress you have made with your new patent. I wish to say that I would like to be counted as one of the many who no doubt will want to handle your battery for motor purposes. No place in the world is better situated for securing cheap electric power which you may know when I tell you that London is the home of Adam Beck, the man who fought single handed for cheap power from Niagara Falls, and London got it for we are now getting electric light supplied us at 4¢ per Killowatt hour and the cost for power is less.

When you get ready to put this great <sup>convenience</sup> and economy on the market I wish you would remember me and put me on the list as one who wants to introduce and sell your new batteries.

I have sold out my soap business and am just waiting to get a chance to take up and handle your new line for this district where as I said no body can be better situated than the people in London are to make use of your latest invention.

Yours truly -

*John W. Meacham*

*Day the report is read  
a bottle bought  
JUN 17 1891  
sent to me  
A. C. Thomas  
June 4/91*

[ATTACHMENT/ENCLOSURE]

**Edison's New Battery.**

At the meeting of the National Electric Light Association last week, in the city of New York, Mr. Edison made a speech in which he asserted that he had invented a new storage battery, which is light, portable, quickly charged, and has no waste or leakage. The new battery is so small that one large enough to run a delivery wagon can be carried in a suitcase, and it can be charged in four or five minutes. Mr. Edison claimed that he had used the new battery on an old delivery wagon with best results. A ten-minute charge would carry the vehicles fifty miles, and he thought the whole cost of electricity for a day's delivery with an average merchant would not be more than twenty-five cents. This seems almost too good to be true, but Mr. Edison does not usually talk nonsense, and if any man could invent a battery of this kind it is probable that he could. The advantages of such a battery are so numerous and so obvious that we can only hope that Mr. Edison's claims will be fully substantiated in the near future.



Post - Ed - Hand

Telephone  
0240 GERRARD.  
Telegrams,  
"POLYTECHNIC, LONDON."

Nov 7/6/11

# The Polytechnic

Electrical Engineering Department,

307, 309 & 311 Regent Street,

London, W.

T. A. Edison Esq  
Marble Park  
U.S.A

5 Bldg July 7 1911  
Dear Sir,  
I have your catalogue + say  
that I hope to see him

Dear Mr. Edison, we London in the fall  
will give full information  
Many people ask me for information  
about your accumulator. They say that my experience,  
as embodied in the report for the Government  
an expectation of commercial developments & they are  
anxious to get into touch with it.

May I be so bold as to call if there  
is any prospect of its being put on the  
market. I have no definite information of the  
present position. Excuse me for troubling you.  
I trust you are in good health. With  
best wishes

Yours sincerely,  
W. Hilbert.

Store & Battery -  
Testing

MEMORANDUM FOR MR. EDISON

July 24th, 1911.

Regarding the type B cell funnel filler:

Luhr has several dies in an unfinished stage. Have been set aside for inspection. These are for the funnel parts only.

Mr. Bliss and Mr. Salzman both say the work was held up at the time on account of the B-4 cap size being then in an unsettled state.

It seems the tube length is not exactly O. K. as made up, but could not learn anything definite from anyone on this, and am making a test to find out.

Mr. Bliss and Mr. Salzman said that they had experienced difficulty in forming the entire piece at once with the stock steel on hand. I am going to order some steel that is suitable and try it out.

They have doped out a method of spinning the tube, and forming the funnel over it, but no sketches or other data on this is to be had. No tools made. I am inclined to believe this will be more expensive than completing the entire operation without the use of spinning.

No tools or information on the manufacture of the tubes. No tools, models or data on the float or wire to be had from anyone.

Have started after this entire outfit and hope to round it up in the next few days.

(9/11/11)

Battery, Storage

Bachmann -

Follow up the little filler with boh index for filling B 4 type Cells. Holland has it in charge.

Bachmann:

When you design crans don't fail use the Condensite drums - It might be good idea to replace gradually all your flake drums with the latest and best condensite Ends.

When Aylesworth returns better see him personally and arrange for film Crock paddles coated Condensite also screens can be coated with Condensite varnish and hardened.

EDISON.

August 1, 1911.

(9/1/11)

Battery, Storage

Greenly:-

When you get thru at Battery work return to Lab. and take up the working up of making our finely divided Iron, Electrolytically the same as you made before you went over.

The sample you made is working fine, and I want you to work it out commercially together with all the details. As you get samples take them up to Smith and have them put on test. Mix 6% of Mercury Oxide with each sample and instruct boy to make 5 gram pockets, put up 2 cells for each good sample - with each pocket of cell use 2 nickel tubes. Each group or sample is to be run 10 times and if with 5 grams of Iron in each pocket, they give 1200 to 1 Volt after 10 Runs have them put on hot Endurance run. The 10th Cold test will give you a clue as to the best conditions to proceed on.

If the 5 grams of Iron containing 6% of HgO gives 1700 after the 50th run to 1 Volt and as good as regular on high or 750 milampere discharge rate, the sample will be O. K. Then you can proceed to determine costs and best methods to commercially install the process in the factory.

EDISON.

August 1, 1911.

MEMORANDUM FOR DR. GOLDSTEIN.

August 12th, 1911.

Before Mr. Edison went away, he asked me to purchase another one of these alkali battery portable lamps, such as he had me purchase for him about six months ago, to see if the manufacturer is using nickle in his battery. The former battery did not have any nickle, but used silver.

Mr. Edison understands that the manufacturer is now using nickle in the battery, and asked me to purchase another one and give it to you, so that you could take the battery apart and see if nickle is being used.

Here is the battery. Will you please investigate it, and if you find nickle, let me know.

You can get at the battery by unscrewing the top, disconnecting the wires and pulling the battery out of the compartment.

M. R. HUTCHISON.

[ATTACHMENT/ENCLOSURE]

Directions for the use of the  
HUBBELL ELECTRIC SAFETY LANTERNS.

Manufactured by the  
Portable Electric Safety Light Co.,  
Newark, N. J. U. S. A.

Read these directions through carefully  
before attempting to use the lanterns.

With this storage battery it is of the utmost  
importance to keep the battery plates from  
contact with injurious substances.

Only solution prepared as indicated below  
should be put into the battery.

In rinsing only distilled water (condensed  
steam direct from the fresh steam pipe from  
the boiler) should be used.

The battery should never be left uncovered.

Vessels used in preparing and in storing  
solution should be carefully cleaned. No  
oils or acids should be allowed to come into  
contact with the solution or battery  
interior.

CHARGING

Lanterns while being charged with current must  
be insulated from each other, hence if  
suspended by their handles, the bar on which  
they are hung must be a non-conductor, such  
as wood. The lanterns should be spaced on the  
bar so that they are not likely to touch  
each other even if not swinging.

If a wooden shelf is used for charging it  
should be coated with asphalt varnish, and  
always kept dry.

Before charging see that the lanterns are  
filled with solution to about 1/2" of the  
top of the cells.

Charging rate is one ampere for eight hours, or  
eight ampere hours at a rate not higher than  
one ampere.

Facing the lanterns, the righthand charging hole  
or terminal under the reflector shell, is  
always positive.

Place the positive wire of the charging line  
into the righthand hole under the reflector  
shell, and the negative charging wire into the  
lefthand hole.

The positive wire of the charging line may be  
determined in the manner shown on the attached  
sheet.

[ATTACHMENT/ENCLOSURE]

#2

CARE OF LANTERNS

When lanterns are in constant use, open every seventh day and replenish solution that has evaporated, and once a month empty the battery and thoroughly rinse out with distilled water and then refill cells with unused solution.

PREPARATION OF SOLUTION

Solution and compound should be kept from skin and clothing.

The solution consists of 20% by weight of Hubbell alkaline battery compound (a solid) and 80% by weight of distilled water (condensed steam)

The specific gravity of the solution is 1, 200, or 25 degrees Baumé or 25 degrees Beams.

Distilled water (condensed steam) is absolutely essential. It can readily be obtained at drug stores if there are no other means at hand. Water good for drinking is not necessarily chemically pure. To 16 ounces by weight (1 lb. or 1 pint) of distilled water (condensed steam) add four ounces by weight of Hubbell Alkaline battery compound, using a clean porcelain, enameled ware, iron or copper dish (not galvanized iron, tin or wood). Stir with a clean glass or iron rod (not wood) until the sticks of compound are dissolved. Then cover the vessel tightly and allow the solution to cool.

Store solution in a clean glass bottle with a rubber stopper, a glass stopper is liable to stick. Always keep tightly corked. Compound also must be kept tightly corked. Always shake solution before filling the battery.

If distilled water be obtained by condensing steam from a boiler plant, it should not be taken from the engine exhaust, as this will contain oil. Neither should water be taken from the boiler gauge cocks. Take steam only from the direct line from the boiler and condense it.

[ATTACHMENT/ENCLOSURE]

#3

TO DETERMINE  
THE  
POSITIVE WIRE  
OF THE CHARGING  
OR  
SERVICE LINES

Wet a small corner of our yellow pole finding paper herewith, placing it on wood or some other non-conductor. Place the two ends of the service lines about 1/4" apart on the wet paper. The paper will become red around the negative wire. A knot should be placed in the positive wire for future guidance.

The service lines should be tested from time to time as the generator's polarity may change, and this will make the other wire positive.

VENTS

Keep the small vent holes in the cover domes open at all times, but in doing so be careful not to injure the thin diaphragms on the cover gasket underneath.

GASKETS

The side of the soft rubber cover gaskets with the thin diaphragms should always be placed uppermost. These diaphragms are pierced with very fine holes, which permit the gases to escape, but prevent the solution from leaking out, should the lantern be overturned.



Battery, St.

1524  
MEMORANDUM OF AN INTERVIEW WITH MR. WIEVER  
OF THE R. & L. CO. SEPTEMBER 28, 1911.

Mr. Wiever came in with Mr. Bee. After more or less irrelevant talk, during which he professed great friendship for the Edison battery and showed me the attached price-list, I said that I could not explain the fact that we sold ten times as many batteries to Anderson as to all the other pleasure vehicle manufacturers combined upon any other hypothesis than that the position of the other manufacturers or their agents must be antagonistic. Mr. Wiever said that this was not so, but that the trouble was that there was nothing to be said in favor of the Edison battery that would warrant its high cost. I told him that it was clear from this statement that he had not read our catalogues or any other literature and knew nothing about the battery. I said that it seemed impossible to get the other manufacturers directly interested unless they had something at stake--had their own money invested in the batteries--and I asked him if he would be willing to agree with us to equip, say 25% of his vehicles with Edison batteries. He replied that he could not agree to do it but that it was up to us to create a demand for the batteries and his agents would be only too glad to sell them. I asked what he meant by this, and he said that we ought to establish garages in the big cities so as to take care of our batteries and give them the attention they require, and that we ought to make a canvass of vehicle owners to get them interested in the battery and that we ought to send out men to help their agents sell

(2)

the battery. He said the Exide people were practically doing this; that their guarantee on Ironclad batteries was very popular and that it had in a large measure destroyed any selling talk in favor of our battery. He wanted us to co-operate with him and pay part of an exhibit to be given in New York in January, our expense to be \$35.00 per day for two weeks. Both Edison and Exide batteries would be shown. This proposition was turned down because of the uncertainty of the present situation.

During the discussion he attacked Anderson; said he had failed two times and that his settlements with creditors were small, and doubted if he was making any money at the present time. He said that he knew that Anderson was losing on his garages. He hinted at the possibility of a combination among the electric vehicle manufacturers, and through out the hint that Anderson might not be so friendly as we think.

They have used an Edison battery at their own plant in Cleveland for over a year, and it was not satisfactory, being much more difficult to take care of than a lead battery. They sent an Edison battery to their agent in Detroit with special instructions to use it in the demonstrating car, but it was sent back because it was too difficult to maintain and too expensive to operate.

The whole effect of the interview was that the R. & L. people have not the slightest idea as to the merits of the battery and have not the least spark of friendship for us.

F.LD/IWW

F. L. D.

10/6/71

Analysis for Dr Holland

Two duplicate test  
cells with 1.5 g. of  
Condensate in each  
solution regular

21%  $H_2O$  + 11.2%  $H_2O_2$   
per liter

To determine amount  
of Condensate in solution  
after a total of 56 runs  
(5.0  $H_2O$ ).

Titball

Section 720

26 x 19.  
Change

Dr. ?

(Start Part - T/E - hand)

10/10/11

gwa -

How about the rubber

dopes, bring it over

when ready - want to

push the Can by

ahead -

Edson

Battery TNO

## Uses for Edison Battery - *W*

OCT 11 1917

- 1 - Street Cars
- 2 Locusts; main railways & deep mines,
- 3 Lighting Railway trains
- 4 Switchmen lanterns
- 5 Switch signal lights
- 6 Car inspection lights
- 7 Working magnets of Railway signal apparatus
- 8 Lighting & sparking automobiles
- 9 Starting automobiles -
- 10 Small cells as substitute of dry cells on auto.,
- 11 For Radiophones in houses " - gas engines
- 12 Telephone station battery
- 13 For Door bell & other signals
- 14 Mirrors lamps
- 15 Policemen lamps
- 16 Gun lighting lamps
- 17 ~~For~~ Lighting isolated houses -
- 18 Temporary lighting isolated houses
- 19 - " supplying power on trucks
- 20 Windmills
- 21 Lighting Yacht
- 22 Lighting & driving yacht
- 23 Driving small fishing ~~boats~~ ships

- 24 - Submarines
- 25 Military portable telegraph telephone
- 26 Wireless -
- 27 - College Laboratory in a test station
- 28 Trucks -
- 29 Taxicabs -
- 30 Pleasure vehicles
- 31 Lighting Weisbach Currencies
- 32 For night lights clocks etc
- 33 Acousticon
- 34 Player Pianos
- 35 Klaxons
- 36 Lighting Aeroplanes
- 37 Telegraph Office wires,
- 38 Lighting Omnibuses
- 39 Farm lights in barns etc
- 40 Lighting Quarries some instances from *Hills*
- 41 Bungalow Alarm
- 42 Thomas regulator
- 43 Ventilating fans
- 44 Accumulating current from very small weather power

- 45 Storing Tidal power
- 46 " wave power
- 47 Running short ferry boats
- 48 Fire Engines
- 49 Small Torpedos, propelling
- 50 for night lights in shops after closing
- 51 for momentary large power in shops
- 52 In small town where there is a factory  
which can store current in day  
time & sell it in town at night.
- 53 Utilizing power of Canal Locks
- 54 Electric Plows
- 55 " Seeding also mowing machines
- 56 Sewing Machines
- 57 Lawn Mowers
- 58 Railway inspection Cars
- 59 wheels dipping in rapidly moving  
rivers to catch tide power
- 60 Store power from solar Engines

- 61 Auxiliary to Mining hoist
- 62 Street Sprinklers
- 63 Street sweepers
- 64 Working Vacuum cleaners

History TOE

Bachman 6

10/11/130

How about progress

with A10 & A12, are

we making them -

S

INQUIRIES WEEK ENDING OCTOBER 14th, 1911

|                                           |                                                         |          |          |                      |
|-------------------------------------------|---------------------------------------------------------|----------|----------|----------------------|
| Indian Orchard & Ludlow Co-Operative Assn | 35 Worthington St Springfield Mass                      | 10-15-11 | Unknown  | Sent data and letter |
| Kurz Machine Company                      | Quincy Ill Cor 11th & Maine Sts                         | Unknown  | 10-13-11 | Wants agency         |
| Pennsylvania Equipment Co                 | West End Bldg Philadelphia Pa                           | Pow Wag  | "        | Sent letter & data   |
| Chas M Stucker                            | c/o Deere & Webber Co 800 Washington Ave No Minneapolis | Unknown  | "        | " " " "              |
| J Goldsmith & Sons                        | Memphis Tenn                                            | D G Roen | 10-14-11 | " " " "              |



October 18, 1911.

Mr. Edison,-

I have had prepared and have turned over to Mr. Bee, ten copies of the list of Adaptations of Edison Battery.

One copy you have in your desk, and I have retained a copy for my files.

If you want any more copies, Mr. Bee will, of course, send such as you desire over to you.

M. R. HUTCHISON.

Oct. 20, 1911.

Electra Cycle Company,

~~Chicago, Ill.~~

85 Helen Ave., Detroit, Mich.

Gentlemen,-

Mr. Edison was very much interested in the illustration and description of the electric motorcycle you manufacture, in the Automobile Journal, which I showed him this morning. He asked me a lot of questions about the motorcycle which I could not answer, and finally, asked me to write you and request that you ship one of these motorcycles over to us, on consignment for a few days. He wishes to look the cycle over, and see if, by applying some ideas he has thought of in the way of a special battery for this kind of vehicle, he cannot increase your mileage and speed.

He is greatly interested in all new adaptations of Edison Storage Battery, and his co-operation will do you no harm.

If you are willing to send one of these machines over, I suggest that you send it without the battery, as we will install the battery after it reaches here. Simply put the box on the machine so that we can slip the battery into it. I will personally take the machine in charge when it arrives, and will bring it to his attention at once.

He feels that such a machine should meet with a large sale, and is sufficiently interested to want to go over the machine in detail.

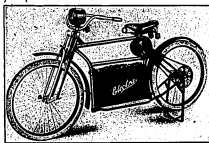
Yours very truly,

Personal Representative and Engineer  
of Mr. Edison.

[ATTACHMENT/ENCLOSURE]

THE AUTOMOBILE JOURNAL.

Specifically stated, except on the written approval of the president and two other members of the board of directors, or of a majority thereof. He shall forward



The New Electric Motorcycle, Made in Chicago.

quarterly to the president and the secretary a certified itemized report of all receipts and disbursements, and shall render a report at each annual meeting. His accounts shall be audited preceding the annual meeting by a committee of three appointed by the president from the general membership. He shall give bond in such sums as may be determined by the board of directors. The expense of said bond shall be borne by the national organization. All books and records kept by the treasurer shall be turned over to his successor, after being duly audited by the committee appointed for that purpose.

"Also to amend article V by adding section 6, to read as follows:

"The national treasurer shall pay, from the national treasury, the expenses of each district upon the receipt of vouchers approved by the district vice president and treasurer. Provided, however, that all district expenditures be authorized by district vice president, and that he incur no greater expense than \$50 without first obtaining the permission of the national president; provided, also, that the national president authorize no greater district expense than \$100, except upon a majority vote of the board of directors."

The Electra Motorcycle.

Herewith is presented a reproduction of the Electra mount, the new electric motorcycle, made by the Electra Cycle Company, Chicago, Ill. The chief feature of the new machine is the motive power. The battery is an Edison, although other makes are fitted upon order, giving 12 volts for which the motor is especially wound.

The battery is carried in the frame between the wheels and the footboard, a comfortable support 25 inches long, affording change of position for rider, is attached to the bottom of the battery.

box beyond which it projects four inches on either side. The right side carries the foot lever, which controls the use of the coaster hub, thus enabling the conservation of current on down grades. The same lever operates the powerful external band brake, and also enables the reversal of the motor so as to act as an emergency brake.

The motor is a specially built, enclosed, weather proof, ball bearing electric device of ample capacity, and guaranteed to be capable of a 300 per cent. overload. The chain drive is enclosed where necessary. It is claimed that there can be no slippage and consequent waste of speed and power. The weight of the complete assembly is 225 pounds.

Storage Battery - Sales

MEMORANDUM FOR MR. EDISON.

October 24, 1911.

Mr. Monnot wishes the following photographs, negatives of which we already have, for framing and hanging up in his London and Paris Offices.

Bumper, Bumper,  
Exhibition Cell A-4,  
Shipping Room Floor,  
Railroad car of cells for Anderson,  
Concussion testing wagon,  
Forming and Testing Room,  
Assembling Cells,  
Battery Building,  
Iron Loading Room with men,  
Iron Loading Room without men,  
Tube making machines,  
Inspection Room,  
Cranes,  
Peeling sheet of built up metal  
off of crane cylinders,  
Cutting up flake sheet,  
Silver Lake buildings,  
Oxygen-acetylene welding outfits,  
A-12 cell with top off,  
Ditto with top on,  
New Design B-4 cell.

In addition, cell group, showing all forms of cells, up-to-date. This negative has not yet been made.

I do not want to send these photographs out without your permission, but as practically all of them have been shown in our catalogues or in printed publications, I don't suppose there will be any objection for Mr. Monnot to have a set of them.

Kindly advise me as to whether you want them to go out or not, and oblige,

W

Battery THE hand writing

ARTISSELSKAPET  
RYFYLKE KRAFTANLÆG

TELEGRAFADR.: KRAFTANLÆG, JØRPELAND  
TELEFON: JØRPELAND

Madecraft  
and Calalague Bullen  
JØRPELAND PR. STAVANGER  
with this (HOLMST)

October 20 22 1911

Ans 11/11/11

Your idea of sending ships loaded with storage batteries & selling the electricity when there is a good market is one of the most original ideas that I have heard of. There is no trouble to do it if it is purely a question of investment and the cost of transport together

with the price. <sup>Summer Park, Norway</sup> you can sell the electricity for the cost of storage battery is about 50 dollars per kilowatt hour. The weight is about 100 to 150 lbs per kilowatt hour. <sup>the cost of the battery is about 100 to 150 lbs per kilowatt hour</sup> I send you a Calalague <sup>to whom we</sup> a tug boat with large steel barge would be the cheapest. <sup>we are</sup> otherwise would have written regarding the case by the chief agent.

Two design We are owners of a water fall on the west coast of Norway and can develop 15000 H.P. at a price of 9-108 fr. H.P. fr. year. This has brought in our mind that with the development of the storage batteries there could be a possibility of delivering electricity to England. If possible at all this could probably best be realized by special built ships, that in reality were arranged as one large storage battery, that get loaded at our power station and deliver-unloads the electricity in the English cities.

It would be of great interest to hear your opinion regarding this idea and to

to know if your storage batteries would  
be suitable for an arrangement as the  
above proposed.

If you would need any further information  
we will be glad to furnish this.

Very truly yours,  
M. P. Rydbeck Kraft  
Calloway St. N.Y.

Bat. Ed. Bond  
Mater 10/24/11

Happy you know  
his initials -

B. Ballouly -  
Marion C.

There seems to be a drive

by the Government to

put in storage batteries

for wireless. I suggest you

come over to laboratory,

look over our works,

perhaps we can make

some arrangement that

would be mutually

beneficial —

I will sign Edison

2

BATTERY, STORAGE -  
Advertising

Memo for Mr. Edison.

IO-30-II.

Mr. Edison:

I have been endeavoring, for three days, to compile an advertisement suitable for this educational campaign we are considering. The more I try, the more am I convinced that such a campaign will prove exceedingly expensive and, perhaps, unwise.

The electrical pleasure vehicle end of the battery business is very small when compared with other lines that remain untouched. You are dealing with a class of people in the pleasure vehicle end who, as a rule, know but little of batteries or things scientific, and who are easily influenced by local garages, in spite of all the advertisements they may read.

If you state that the ordinary garage man, or some of them, do not recommend Edison Battery because of dearth of repair work when once installed, he is going to get back at you, even to the extent, perhaps, of adding a little aluminum or chlorine to such cells as he has access to. As a rule, the garage proprietors are crooks, and do not hesitate to resort to underhand methods if aroused. The lead battery people could and would quickly convey to him in an indirect manner/ what to put in the cells.

On the other hand, when you are dealing with responsible commercial concerns, such as Department Stores, Telephone Companies, etc., these matters are under control, because one man is responsible for the battery equipment and would not dare to abuse them.

A casual glance at the list I prepared, reveals several unworked fields, wherein the lead battery cannot compete at all. Do you not think the same amount of money you contemplate spending in this advertising campaign can be used to better advantage, perhaps, than as contemplated?



You have spent a large amount of money on this battery already, and ought to commence to get some of it back now. You are naturally a fighter, if drawn into a scrap, and will be inclined to go the limit if the lead people retort, as they certainly will. They will not remain passive.

Anderson is doing good work. Suppose we wait and see how he makes out before joining in, meanwhile concentrating on other lines? We can get Anderson to work in the various arguments in favor of the Edison Battery, including the photo of the overloaded car, as his staff will run out of ideas soon and will be coming to us for some new ones. Meanwhile we can go ahead on other lines.

That Butcher Wagon is going to be worth a dozen pleasure vehicle lines. Interurban cars, electric terminal locomotives, house lighting etc. all offer large markets WHERE THE LEAD BATTERY CANNOT COMPETE. By spending enough money to employ really proficient and experienced men to work up some of these fields, results of a lasting nature with freedom from the annoyance to which you will be subjected in this contemplated campaign, will obtain.

The Klaxon Co. has spent over \$75,000 in the last six months educating the public to the perfectly obvious fact that a harsh sound is the real warning signal. Nothing more. The education of the public by paid advertisements is extremely expensive. They entered the campaign thinking \$25,000 would be sufficient. Your campaign is much more difficult and will certainly cost over \$100,000.00 before you see daylight. Is the game worth the candle when your own peace of mind is added to actual cash expenditure?

You have been fighting all your life. It is time you commence to enjoy peace after all your labors. That "30 watt hours per pound" battery will do more actual good when perfected than volumes of

advertising matter. You are the only man who can bring this about, and your work will be seriously hampered by the underhanded retorts you will get from the lead people, because it will upset your peace of mind.

You have nothing to fear as to this Factory keeping busy as soon as this submarine cell is on the market. I will guarantee to keep a factory of twice the size working day and night by the end of two or three years. But I have got to have a lighter battery for equal power, or a more powerful one for equal weight when the submarines graduate from the 500 and 1000 ton class to the 5,000 and 10,000 ton final development. The present standard hydrate in small tubes will do for the next three years, but I do so want to see a higher capacity from the same volume and weight.

If I were not exceedingly fond of you and deeply concerned in your welfare, and if I did not know you would accept this letter in the spirit in which it is written, I would not presume to write it. For the past ten years I have been actively associated with large financial interests as business engineer. My activities were not confined to engineering matters solely. Business policy has entered largely. Some of my suggestions have been adopted and have proven successful. I have expressed adverse advice in two large wars that were waged between interests, and have seen my judgment vindicated by losses running into the hundreds of thousands which would have been avoided by diplomatic handling of the issue. But I do not presume to pit my experience against your mature judgment. Your word and wishes are Law to me, and I stand ready to follow your decision in all things. Whatever ability I may have is at your disposal for 20 hours a day and 365 days in the year.

*Hutton*

Oct. 30, 1911.

Bicycling World Co.,  
154 Nassau Street,  
New York City.

Gentleman,-

Please furnish me with the  
correct address of the Electra Cycle  
Company, of Chicago, Ill.

I have addressed a letter  
to them at Chicago, Ill., but it has  
been returned to me.

Thanking you in advance, I  
am,

Yours very truly,

Army and Navy Representative

MRH/ABM

PUBLISHED  
BY THE  
BICYCLING  
WORLD  
COMPANY  
124 NASSAU ST.  
—  
ADDRESS  
P. O. BOX 646

THE  
BICYCLING WORLD  
and  
MOTORCYCLE  
REVIEW  
Founded  
1877

PRESIDENT  
JOSEPH GOODMAN  
TREASURER  
R. G. BETTS  
SECRETARY  
F. W. ROCHE  
—  
CABLE ADDRESS  
"BICYCLING,  
NEW YORK"

NEW YORK October 31, 1911.

Edison Storage Battery Co.,  
Orange, N. J.

Attention M. R. Hutchinson

Gentlemen:-

We have your favor of the 30th instant  
and in reply thereto would say that the address of the  
Electra Cycle Company is 65 Horton Avenue, Detroit,  
Mich.

Trusting this is the information you  
desire, we are,

Yours very truly,

The Bicycling World & Motorcycle Review.

*J. H. Allen*  
Editorial Department.



AVAILABLE PRACTICAL ADAPTATIONS OF THE EDISON STORAGE BATTERY.

(Compiled by M. R. Hutchison,  
Edison Laboratory, Nov. 7, 1911)

FOR THE PROMULSION OF-

- 9 ~~8~~ - ~~Electric terminal locomotives~~ <sup>low internal resistance</sup> (A special type of battery which can be "boosted" charged and discharged at a very high rate.)
- 6 ~~7~~ - ~~Mining locomotives~~ (Not affected by concussion of rough handling as in coupling the train up, etc.)
- 7 ~~8~~ - ~~Industrial plant locomotives and handling devices.~~ (Replacing the dangerous steam, compressed air, and super-heated steam locomotives and devices.)
- 8 ~~9~~ - ~~Industrial plant indoor trucks.~~ (A number of hand truck manufacturers are going into this field. The field covers handling baggage, freight on piers, machine parts in factories, etc. Economically & quickly.)
- 15 ~~16~~ - ~~Fire Engines and fire trucks.~~ (Much more dependable than the gasoline engine. Always ready. Might be able to interest the American La France Fire Engine Co. in Newark.)
- 16 ~~17~~ - ~~Lawn Mowers - LARGE~~ (Horses disfigure lawns by their hoof-prints. Gasoline engine lawn mowers are not perfected yet. There is no reason why the electric lawn mower will not surpass all other forms of power for this purpose. Simple to operate.)  
~~Small~~
- 17 ~~18~~ - ~~Road rollers.~~ (Road rollers must have weight. The steam engine is obnoxious in cities, and will not be tolerated very much longer. Might try to interest some of the road roller manufacturers in ~~the~~ electric ~~engine~~ <sup>motors</sup> powered by Edison Battery. ~~(The same form of battery that we use in electric terminal locomotives can be used in interurban high speed cars, thereby overcoming the loss of transmission of the current over long feeder wires, and making the system operated through sleet and storms, which now incapacitate them.)~~

~~Small railway car~~

10 ~~11~~ - ~~Lawn Mowers - Small.~~  
Ideal work in cutting a small lawn in storm or narrow alley + small motor.

file  
S. Baile

11 ~~20~~ 20. Railway inspection cars.

(Much more reliable than a gasoline propelled inspection car, as it is not so liable to break down on a main line with consequent danger from trains colliding with it).

18- 21. Street sweepers and sprinklers.

(The wear and tear on clutch and gear shifting mechanism is so great, that street sweepers and sprinklers have not yet come into general use. The electric street sweeper or sprinkler is far superior.)

3 22. Electric omnibuses.

(Far superior to the gasoline, because of absence of wear and tear on clutch, gasoline engine and gear mechanism.)

1- 23. Electric trucks.

2- 24. Electric pleasure cars.

12- ~~25~~ 25. Electric motor cycles.

(There is already one motor cycle manufacturing concern that is turning out electric motor cycles. They now use Edison Battery as well as lead. Any of the bicycle magazines contain the advertisement.)

4 26. Taxicabs.

The current taken out of the battery in a ten mile run can be put in again in ten minutes. A five mile run in five minutes, etc., up to about 20 miles, when it will take longer, as the battery cannot then be charged at such a high rate, unless it is very well ventilated and cooled.)

13- ~~27~~ 27. Electric farming machinery.

(A gasoline engine, or any other combustion engine in a wheat field is a dangerous proposition. After the wheat is dry and ready for stacking and gathering, a fire will do a good deal of damage.)

14- ~~28~~ 28. Submarine boats.

(This matter is in Mr. Hutchison's hands.)

10 Electric launches.

(Excellent for inland lakes, but for heavy sea work, such as on the Atlantic Coast, the gasoline engine is superior, because of its lighter weight, thereby greater sea-worthiness of the craft).

14 Short trip ferry boats.

(Many street railway lines, etc. operate short ferries. An example is at Rochester, N. Y., where a small ferry boat runs from the Yacht Club to the other side of the river - only about 350 feet. It is propelled by a steam engine, operating on a chain that lies at the bottom of the river. Two men necessary to operate this boat, licensed pilot, and licensed engineer. Could be operated by one man if Edison Battery installed to operate the chain driving mechanism. Charging can be done at one of the terminals, as the boat lies for five minutes at each end between trips.)

51. Electric trolleys.

(In Mr. Hutchinson's hands.

57- Industrial Power Tractors:

It is not always possible to secure the services of a locomotive to service cases in large factories, and even when convenient, the fact that the locomotive takes on a track necessitates much unnecessary shuttle work. A low gear electric tractor, driven as is an automobile, can accomplish the task in half the time and very much expense.

OPERATION OF

1. Klaxon Warning Signals.

(There are over 50,000 Klaxons and Klaxonets in use today in the U. S. <sup>78PM</sup> Each of these ~~cases~~ is operated by a battery of some kind. The majority ~~of the~~ <sup>W&S</sup> ~~batteries~~ load storage-batteries. The most universally used Klaxon, types L + S and ~~the~~, take our standard B-2 or B-4 ignition sets. They are wound to run from 6 volts, and take about 7 amperes. Their use is of very short duration each time ~~when~~ they are blown, and therefore, it can be briefly stated that a Type L or Type S Klaxon can be operated for one year from a B-4 ignition set, without re-charging or without the addition of any water. This has been done for the past two years on the car of Mr. Hutchinson, the inventor of the Klaxon. (See curve No. 48, ~~copy of which can be secured from Mr. H. H. Smith of the Laboratory~~ <sup>hermit</sup>) The Klaxonet can be run for a year on a B-2 ignition set, without re-charging or the addition of any water. Of course, it is <sup>better</sup> ~~advisable~~ to add distilled water about every three months; ~~the battery need not be re-charged or re-filled this one year.~~ All bond-fide dealers, and jobbers in the U. S. handle Klaxons and should be approached on sale of Edison Battery for this purpose. The same battery can be used for ignition and for operating the lights, but of course, if an increased load is put on it, it must be charged oftener.)

2. Automobile ignition systems.

<sup>at ignition</sup> (Where the battery is used simply to start the engine up, and for that purpose alone, it will operate for at least two years without re-charging, but water should be added about every three months. ~~L-sets do the B-4.~~ The B-2 should do this work for a year, without re-charging. Where the B-4 is used for ignition all the time, it should be charged about ~~once every~~ <sup>every three months</sup>)



four months. ~~They run about~~  
~~one month.~~

3. Gas engine ignition systems.

(There ~~are~~<sup>is</sup> a large number of gas engines in industrial plants, most of them being ignited by battery. They run usually about 10 hours a day, and under such circumstances, the battery should be charged about once every month, if the B-2 is used, and about once every two months if the B-4 is used.)

4. Motor cycle ignition systems.

(The small cylindrical type Edison Battery, taking up less room and not weighing as much as the standard dry cell, can be used for ignition on motor cycles. At present, dry cells are used universally on motorcycles for ignition, except on the more advanced types that have magnetos. The same battery will operate the lighting system of the motorcycle, which is, at present, deficient, relying solely upon acetylene, or kerosene lamps. All the motorcycle manufacturers should be canvassed in this matter and dealers and jobbers seen.)

5. Automobile and gas engine electric self-starting apparatus

(Within the next year or two, no ~~more~~ gasoline engines <sup>using auto</sup> engine operation will be ~~needed~~<sup>started up the usual, as now obtaining</sup>. Various forms of self-starters <sup>are coming into</sup> including motors, which act as generators to recharge the battery after the car is started, and simple motors alone, ~~used for starting~~. This starting of a gas engine requires very heavy current. A lead battery will deteriorate under such treatment, because it amounts ~~almost~~ <sup>practically</sup> to short-circuit. The Edison Battery is the ~~only~~ <sup>only one</sup> ~~best~~ adapted to this work. All the automobile manufacturers should be seen, especially the Cadillac Co., who are now turning out such a device. E. V. Hartford of the Hartford Shock Absorber Co., has also gotten out an electric self-starter, and, as he has one of the Edison Battery outfits installed at his summer

residence for lighting, he is very partial to the Edison Battery. He should be seen at once. His address is Jersey City, N. J.)

6. Electric cranes and hoists.

(The manufacturers of these should be interviewed, as they now operate by trolley. Owing to the flexibility of control of an electric motor, it is best adapted to crane work. The manufacturers of all cranes should be interviewed in this matter.)

7. Electric lifting magnets for cranes.

(Practically all the iron rails and other magnetic substances are loaded ~~on~~ *aboard* Lake steamers by large electro-magnets. If the power circuit goes off while the magnet has a load in mid-air, the load falls ~~and is apt to injure somebody, or sink the steamer.~~ *down from* If these magnets are operated by storage battery, this contingency will not arise. The electric crane and hoist people should be seen. There are a number of advertisements in the "Electrical World" and other technical papers by manufacturers of electric lifting magnets for this purpose.)

8. Electric Hoists for mines.

(Each mine should be equipped with a reserve battery, so that in case anything happens to the power circuit operating the mining hoists, the battery will furnish the current. In such case, the battery can be charged about once a month, and held in reserve. It need not be a very large battery, only of sufficient capacity to operate the hoists for say, one half day, ~~and if proper provision is brought to bear, through Washington, Department of Commerce and Labor, mines can be compelled to get in auxiliary power for this purpose.~~

9. Electric central station over-load switches.

~~level~~  
(All ~~the~~ central stations have main switches which are operated by batteries when the over-load comes on. These batteries are floating ~~on the lines.~~)

COPY

May 26th, 1911.

Mr. D. Basch,  
Switchboard Engineer,  
General Electric Co.,  
Schenectady, N. Y.

My dear Mr. Basch,-

When I returned to the Laboratory the other day, after having discussed this matter of operating your switches in power stations, I had a type A-4 and a type A-8 battery put on test, to enable me to determine just what type is best suited for this service.

The type A-8 proved most satisfactory, the discharge voltage on 400 amperes being as follows: At the end of 1-1/2 seconds voltage 1.04, at the end of 1-2/5 seconds voltage 1.017. At the end of 2-3/5 seconds voltage 1.015. At the end of 15a seconds voltage 1.

It is, therefore, evident that by using 80 type A-8 cells, you can float them on the 125 volt line and be sure of 80 volts at 400 amperes, whenever the direct circuit breakers need them. You can let these batteries remain floating on the line for long periods of time, without further attention than replacing with water about once a week.

Yours sincerely,

(Signed) M. R. HUTCHISON.

All large power houses use this system, and should be called on. The lead battery deteriorates rapidly, by reason of its being on charge all the time, and being seldom used. The Edison Battery will stand this over-charging indefinitely without any injury whatever.)

~~10. Ordnance gun driving apparatus. (This is in Mr. Hutchison's hands.)~~

~~11. Ordnance gun handling motor, and turret handling. (This is in Mr. Hutchison's hands.)~~

~~12. Wireless telegraph apparatus. (A law will soon be passed necessitating the equipment of all wireless apparatus with a reserve storage battery. Mr. Hutchison attends the meeting of the Board in Washington on the 28th instant, and will advise later as to the best method to pursue in this connection.)~~

~~13. Wireless telephone apparatus. (This is only coming into use gradually, and work thereon will be of little avail at the present time.)~~

~~14. Military portable wireless apparatus. (This is in Mr. Hutchison's hands.)~~

~~15. Military portable apparatus, Ditto.~~

~~16. Military portable telephone apparatus, Ditto.~~

~~17. Fire control apparatus, for Army and Navy, Ditto.~~

~~18. Fire control apparatus, for Army and Navy, Ditto.~~

~~19. Battery tables, Ditto.~~

~~20. Battery tables, Ditto.~~

~~21. Battery tables.~~

~~22. Air brake motors.~~

(This is coming into use and the purchase is being handled by Mr. Thompson.)

(Mr. Thompson should be given latitude to enter this field, as a good many turn tables are operated electrically.)

(On the system designed & patented by Mr. Hutchinson recently, the current going through the arc light on into urban cars, when the car is in the country, charges storage batteries. From these storage batteries, power is derived for operating the air brake motors, lights of the car, and electric warning signals. The power thus saved is now thrown away by resistance in series with the arc light to cut the voltage down from 500 volts to 45 volts for use of the arc light. The battery in series with the arc light takes the place of some of this resistance, Mr. Thompson has this letter in hand.)

10. ~~Blasting apparatus.~~

(Electric setting off of blasts is universally used in all mines and quarries. The B-2 or B-4 cells is excellently adapted to this work. It should be worked up and companies manufacturing such apparatus should be interviewed.)

11. ~~Emergency Battery or Local telegraph apparatus.~~

*The Western Union Tel. Co. & Postal Tel. Co. both have large battery room power. I don't see how they can be used from Claudburg.*

(The current for operating the buzzer in the local station is now derived from the old type of blue violet cell. One or two B-2 or B-4 cells would operate a buzzer satisfactorily for a very long time. It is doubtful, however, whether the telegraph companies will take any interest in this.)

12

**B. Burglar Alarms.**

for this more expensive Edison Battery as the blue vitrol cell is giving very good satisfaction.)

(The American Telegraph and Telephone Co. use a large number of storage batteries for operation of burglar alarms, and should be interviewed. There are also a number of private burglar alarm companies that should be interviewed.)

13

**C. Fire alarms.**

(Every city and town in the U.S. that is equipped with a fire alarm system uses storage batteries. A town of the size of West Orange, for instance, uses a five ampere hour cell. The discharge current is very low. They have reserve battery, using one set of cells for 24 hours, and throwing it off and putting it on charge for 24 hours, while the other set is being used. The Ganewell Fire Alarm people should be interviewed in this matter, as well as all independent fire alarm apparatus manufacturers.)

14

**D. Thermal Regulators.**

(The temperature of cold storage boxes used by butchers, etc., is regulated by a thermostat, which operates the electric motor to start up or stop the compressor, as the temperature within the storage box goes up or down from the critical point. Such manufacturers as the Brunswick Refrigerating Co. New Brunswick, N. J., and other manufacturers of refrigerating machinery should be interviewed.) The temperature of Buildings also controlled by Thermostat.

15

**E. Ventilating fans.**

(All mines are equipped with large, ventilating fans, usually electrically driven. In the event of failure of the source of supply of current, these fans should be operated by storage batteries. ~~The Department of Commerce and Labor should be appealed to in this matter, along with the application for compiling equipment of a battery for operating the electric hoists. Ventilating fan manufacturers should be interviewed in the matter.~~

16

**F. Exhaust fans.**

(A great many manufacturers use exhaust fans for taking away gases, etc. from processes of manufacture. In the event of failure of the supply of current, these fans will stop. A storage battery installed to act in emergency will be advisable. Exhaust fan and ventilating fan manufacturers should be interviewed.)

17

**G. Small fan motors.**

(The physicians and surgeons of the U. S. should be circularized on a complete small fan motor outfit with Edison Storage Battery, for use with their patients, during warm weather. The lives of Mr. Edison's chauffeur's wife and baby were saved this past summer

*by an Edison fan motor operated by Edison Battery.*

were saved this past Summer  
by the use of one of the  
~~Edison Storage Batteries~~  
~~(operated by Edison Battery.)~~

18 Sewing machines.

(Large manufacturers of dress goods, shirt waists, etc. operate sewing machines. Sometimes the power goes off with consequent loss of time ~~and~~ it might be found advisable to see some of these people to determine if they would not be willing to put in an Edison Battery to be used in reserve. Sewing machine manufacturers should be interviewed with a view of using Edison Battery on their electrically driven sewing machines they supply to individual households.)

19 Vacuum cleaners.

(All the vacuum cleaner manufacturers should be seen, as many of them operate electric vacuum cleaners which cannot be used in many instances, because of the absence of power. A great many of these vacuum cleaners are installed in residences, where nothing but alternating current is available and only at night. With a rectifier to charge the storage battery, the direct current vacuum cleaner can be used, and it might be found advisable to take this up.)

20 Cigar lighters.

(All the manufacturers of cigar lighters should be seen, because they all use dry batteries for operating these cigar lighters. The American Electric Novelty Co. manufacture a cigar lighter. The American Tobacco Co. and the United Cigar Stores Co. could furnish a list of the cigar lighter manufacturers, that are the best, and they should be seen in this connection.)

21 Phonographs.

(The business phonograph would be used much more extensively in places not supplied with power for operating. This battery can also be used for operating household phonographs.)

22 Household moving picture machines.

(This little machine, which will soon be on the market, can be operated as to its light, by Edison Storage Battery.)

36. Local battery telephones.

(In all suburban districts and small towns, each telephone has two or three cells of dry battery for operating it. These dry batteries deteriorate rapidly, and it is a source of constant expense to the telephone Cos. to renew these. Telephone manufacturers should be interviewed on the matter of the cylindrical cell, as they will certainly come in to use for this purpose. The Stromberg-Carlson Telephone Mfg. Co. uses 80 carloads of dry batteries a year on the telephones they manufacture and send out. An Edison Battery should operate a telephone for several years without re-charging, as it is not in circuit except when the telephone is being used.)

23

37. Central battery telephone systems.

(All telephone manufacturers use lead storage batteries for their central battery. These will vary in size from the A-4 to the A-12, depending upon the load. The salesman handling the telephone business should study up on this matter by referring to curves of performance which we already have.)

24

38. Electric revolution indicators.

(There are a number of instruments made which indicate the successive revolutions of engines by contacts closed by the main shaft, operating electro-magnet in indicating devices placed at various places about the premises, or about the ship, if used on board ship. The Edison Storage Battery can be used for this purpose.)

25

39. Door bells.

(Edison Battery of cylindrical form can be used for several years for operating door bells, floor pushes, etc., in residences, before it is necessary to re-charge them. The present dry batteries go out of use by reason of the high temperature of a house, dry, heat, etc., in the winter time.)

26

40. Gas lighting apparatus.

(All gas lighting apparatus is operated by dry cells. The Edison Battery cylindrical form is excellently adapted to this, and will

run several years without charge. Gas lighting manufacturers should be interviewed).

~~41. Instruments for the deaf.~~

~~(There are a number of instruments on the market for enabling deaf people to hear. They are electrically operated, and the matter is in hand, however, and needs no attention).~~

27 ~~42.~~ Factory machinery, lights, and temporary power from batteries on trucks.

(Garages have central stations equipped with electric trucks, and can let it be known among the manufacturers that power from these trucks can be supplied in case of emergency by running the truck to the premises, and connecting up to the power and lighting circuit on the premises. Manufacturing concerns etc., owners and operators of electric trucks can use their own trucks for this purpose.

28 ~~43.~~ Electric self-playing pianos.

(A number of these have come into use, and the self-playing piano people should be interviewed in the matter.)

~~44. ~~Electric~~ ~~self-playing~~ ~~pianos.~~~~

~~(This matter is in Mr. ~~Thompson's~~ hands.)~~

~~45. ~~Electric~~ ~~self-playing~~ ~~pianos.~~~~

~~(This matter is in Mr. ~~Thompson's~~ hands.)~~

~~46. ~~Electric~~ ~~self-playing~~ ~~pianos.~~~~

(Mr. Thompson should be given latitude to talk with Edison Storage Battery for the operation of draw bridges, because when the draw is opened, unless cable is run to the motor, electric motors cannot be used for this purpose. The motor can be charged when the draw is in place, and the draw operated by motor. This would mean running up steam on a steam engine on the draw, and should be pushed).

29 ~~47.~~ Portable electric drills.

(These drills are coming into use universally in garages, etc., and many times on outside jobs, they cannot be operated because of the absence of power. The portable drill manufacturers should be interviewed).



- 30 48. Portable riveters.  
31 49. Tree spraying apparatus.

(The same applies here).

(The use of sprays for preventing destruction of trees by insects is coming into universal use. These sprays are usually operated by gasoline engines. There is no reason why they should not be operated by storage batteries with electric motors. The manufacturers of such apparatus should be interviewed).

- 32 50. Cement Blowing apparatus.

(A new system has recently come into vogue, by which cement is sprayed or blown onto the steel work, instead of being put on by hand, as by Masons, etc. The manufacturers of this apparatus should be interviewed, because it is not always convenient to get power to operate the motor for this purpose. The same truck that they haul their merchandise with could be used for doing this.)

~~51 Top hydraulic apparatus.~~

~~(This apparatus is in Mr. Hutchison's~~

~~52 Submarine apparatus.~~

~~(This apparatus is in Mr. Hutchison's hands.)~~

- 33 53. Electric time systems.

There are a large number of Electric clocks in use in schools and factories throughout the United States. In these systems, a master clock, which is supposed to keep perfect time, closes the circuit every minute, sending current through the secondary clocks, which, by means of electro-magnets, operate the hands to keep them in step with the master clock's hands. All schools and colleges should be canvassed in this matter, as well as other places where such clocks are used. This includes railway stations, etc. Also the Electric clock manufacturers to be interviewed. There are some electric clocks that use magnets, with no battery. But they are expensive and are not in as much use as the battery operated outfits).

~~54 [unclear] apparatus.~~

~~(This apparatus is in Mr. Hutchison's hands.)~~

34 \* Electric toys of all kinds.

(All manufacturers of toys should be interviewed. They use now, dry batteries. These dry batteries last for a short time, and the operation of the toys is not satisfactory. There is a very large market awaiting the cylindrical cell for this purpose).

FOR LIGHTING

- ~~1. Street cars.~~ ~~(Information on file)~~
- ~~2. Interurban cars.~~ ~~(Same)~~
- 14 X. ~~Subway cars, emergency lights.~~ (Laws will soon be passed, necessitating the equipment of all subway and elevated trains with emergency lights, operated by storage batteries, so that when the power goes off, the lights will remain in the car. The headlamp system in New York is so equipped. The lead battery is of little service on this, because it deteriorates rapidly. This matter is in Mr. Thompson's hands.)
- X. Subways. The law will soon compel the illumination of subways by storage battery lights, or a reserve storage battery in the power stations, to take care of the lights in case the power goes off.
- ~~5. Railway train lighting.~~ (The difference in weight between the Edison battery and the lead battery will prevent the Edison battery in short time, owing to the high cost of hauling on fast passenger trains. Mr. Thompson has this matter in hand.)
- ~~6. Railway signal lights.~~ (In Mr. Thompson's department).
- 13 X. Car inspector's lanterns. (The small cylindrical cell is excellently adapted for this kind of work, and should be pushed for this).
- 12 X. Train crew lanterns. (The same applies).
- ~~7. Locomotive headlights.~~ (The steam turbines universally used for operating the argon light of the headlights of the locomotive is especially favored of steam, and is very unpopular among engine drivers, because of the difficulty of supplying it with steam. High storage battery installed on a locomotive or on the tender would do this very satisfactorily.)
- ~~8. Locomotive headlights.~~ (This matter is in Mr. Thompson's hands.)

6. Automobiles, either in battery alone or in conjunction with dynamo.

(There are a large number of lighting outfits being installed on automobiles. The objection that has been raised to the Edison Battery thus far on such lighting outfits is the difference of potential between the charge and discharge voltage. This is of no moment however, because when a car is standing still, it does not need the lights as brilliant as when moving. The battery is simply to take care of the lights when the speed of the engine falls below a certain rate of rotation. Therefore, the argument is groundless, and the Edison Battery ~~cannot~~ <sup>is perfectly</sup> be used in this work. Lead Batteries now being installed will soon commence to play out and the Edison Battery will come in on the renewals. This field should be pushed very hard).

7. Mining lamps.

(All miners use a lamp. The cylindrical cells can be used for this purpose to great advantage. Large mine owners should be communicated with on this subject. In fact, a complete miner's lamp should be gotten up and sold with Edison Battery).

8. Police lamps.

(All policemen on night duty carry an inspection lamp for inspecting locks of doors, etc. These lamps are now operated by dry batteries. Many thousands of the Edison Battery of cylindrical form can be sold for this purpose. A complete lamp with Edison Battery in it should be designed and put on the market for this purpose).

~~10. Postmen's lamps.~~

~~(Postmen carry up the same kind of lantern that the firemen use to read the addresses on letters. Inspection of the interior of mail boxes, etc. in dark, the Postmen's lamps will be taken care of by Edison as soon as these lamps are ready).~~

11 ~~10~~ Night lamps and clocks.

(The American Electrical Novelty Co. and others make a large number of clocks, which, by pressure of a button, can be read. The small cylindrical cell should replace the dry cell for this purpose).

~~10. Stage, ballet and miscellaneous uses.~~

~~(In the event of failure of the lights on board ship, the interior of the magazine is illuminated by these small safety lamps, that are already on the market. The Mison Battery should be adapted to such a lamp and a very large sale would result. Mr. Hutchinson has this matter in hand).~~

5 ~~10~~ Shops, Offices, etc., after power is off.

(There are many factories, lighted by their own dynamos, which shut down at 6 o'clock. In the event of the officers of the company desiring to work after dark on the books, etc., they have to use kerosene lamps. A reserve storage battery outfit would be very advantageous in such work).

9 ~~10~~ Emergency lights in theatres.

(If proper pressure is brought to bear all theatres can be compelled to put in such a battery for emergency in case the lights go out by reason of ~~some~~ ~~reason~~ ~~of~~ ~~some~~ ~~kind~~ ~~or~~ ~~discontinuation~~ ~~of~~ ~~the~~ ~~current~~ ~~from~~ ~~the~~ ~~main~~ ~~line~~ ~~the~~ theatre can be lighted by the storage battery ~~power~~.)

*the current goes off the exits*

10 ~~10~~ Stage ballet and miscellaneous uses.

(There are a number of ballets staged in which small electric lamps are used on the person of each dancer. The cylindrical cell is excellently adapted for this work. When a show is on the road, they cannot always get the small dry batteries for the electric lamps, but can carry the Mison Battery with them and have them charged from time to time, as they may need it).

1 ~~10~~ Country houses.

*(There are thousands of country & suburban houses still using kerosene lamps or the most dangerous gasolene & acetolene systems. A single gasoline engine, driving a dynamo, installed in an oak house, with Mison Battery located in the cellar, meets this condition perfectly.)*

~~(There are a large number of isolated plants in use today in country houses. The Mison Battery should be adapted for this work. Isolated plant installations should be replaced by Mison Batteries.)~~

2 ~~2~~. Yachts.

(The same holds good on yachts).

2 ~~2~~. Omnibuses.

(There are quite a large number of gasoline and horse driven buses that must be illuminated inside. The storage battery is coming into extensive use for this purpose. The Edison Battery is best adapted for this use. All gasoline car manufacturers should be interviewed in this matter).

~~Electric lighting by  
storage battery.~~

~~(See also the statement  
of Mr. [redacted] who  
views in this matter)~~

25. ~~Reserve for light ships and  
light houses using electric  
power.~~

~~(This matter is in Mr. Hutchinson's  
hands)~~

4 ~~2~~. Hotel & cafe dining tables.

(In many instances the individual lighting of tables in the center of dining rooms is difficult. A small Edison Battery accomplishes this excellently. The Blackstone Hotel in Chicago is so equipped.

MISCELLANEOUS USES.

- ~~Management of power storage~~ (This is a ~~proposition~~ ~~and~~ ~~work~~ ~~these~~ ~~is~~ ~~not~~ ~~possible~~ ~~yet~~ ~~as~~ ~~to~~ ~~pushing~~)
1. Carrying day or night loads of small plants.  
(There are large numbers of plants throughout the country which are now running day and night, having ~~at~~ ~~the~~ ~~same~~ ~~time~~ a ~~light~~ ~~day~~ ~~load~~ ~~and~~ ~~a~~ ~~night~~ ~~load~~ ~~or~~ ~~vice~~ ~~versa~~. Edison Storage Battery can be used to great advantage in such work. ~~Shutting down the plant during the winter causes the water to freeze.~~)
4. Storing power generated by wind-mills.  
(There is no reason why power derived from wind-mills should not be used to charge storage batteries for lighting country residences, operation of farm machinery etc.)
5. Storing power generated by tidal motors.  
(Various schemes are on foot for using the tides to generate power. As the flow of the tide is intermittent the power must be stored. The Edison Battery is excellently adapted for this purpose).
6. Storage power generated by wave motors.  
(The same holds good).
7. Storing power generated by solar engines.  
(Efforts are being made to concentrate the heat from the sun, to boil water, to operate steam engines, to drive dynamos. Owing to the uncertainty of the weather, this power must be stored, and Edison Battery is best adapted to this work).
8. Water wheels.  
(There are a large number of rivers and streams that cannot be dammed up for ordinary turbine operation, but which are still available for power by the use of large paddle wheel turned by the flow of the water. Power can be stored up in the night-time to augment the dynamo the next day for the operation of electric motors for farm machinery, etc. Sometimes this power is not sufficient for the operation of grinding mills, etc. but if augmented by power stored at night, would operate these mills the next day).

2

9. Reserve power for heavy demands. (~~When vessels pass through canal locks, the water must be admitted slowly or released slowly, in order that dangerous currents will not be produced, which would tend to cause the vessel to collide with the end of the lock. This power is now going to waste. There is no reason why a reversible turbine system should not be used so that the water passing into or out of the lock can operate the turbine, generate electricity, for storage in Edison Storage Battery. The power derived therefrom could operate the lock mechanism as well as furnishing current for lights etc., etc.~~)  
*Edison Battery can be used in a number of such instances to great profit & advantage.*

9. Utilizing and storing power, now going to waste in emptying and filling canal locks.

(When vessels pass through canal locks, the water must be admitted slowly or released slowly, in order that dangerous currents will not be produced, which would tend to cause the vessel to collide with the end of the lock. This power is now going to waste. There is no reason why a reversible turbine system should not be used so that the water passing into or out of the lock can operate the turbine, generate electricity, for storage in Edison Storage Battery. The power derived therefrom could operate the lock mechanism as well as furnishing current for lights etc., etc.).

10. College laboratories and test stations.

(All colleges and laboratories use storage batteries for purposes to which the ordinary line current is not adapted. These batteries receive very little attention, and in the case of lead batteries, deteriorate through lack of attention. The Edison Battery is the best Battery in existence for this kind of work. All colleges and laboratories should be canvassed in this matter).

11. High potential, small unit test batteries.

(In all colleges and laboratories, it is necessary to have access to very high direct current voltages. The lead cells now used for this purpose are very small, but deteriorate very rapidly. They get very little use, but are needed quickly when the urgency arises. The one ampere-hour cell is large enough for such purpose, and thousands of them can be sold to meet this demand).

3 - Watt Meter Testing

*(The new Edison Co. meter men carry two 4 Edison cells to test house meters by. Current is 2-5 amperes for a few seconds and...)*



Nov. 8, 1911

Dr. Goldstein:

I am sending herewith, according to Mr. Edison's instructions, the electrolyte found in A-6 cell, No. 23565, returned from The Anderson Car Co., Detroit, #168

The tubes in this cell were badly buckled and Mr. Edison desires to get a complete analysis of the solution to find if there were any impurities which would have caused this trouble.

I am also sending a sample of electrolyte removed from battery used by the Third Avenue R. R. Co. Will you kindly test this for specific gravity and percentage of sulphates. #165 I am also sending an A-6 can containing sediment for analysis. This sediment was found in A-6 cell 459 returned by the Springfield Waste Co. Nov. 3, 1911. #167 The electrolyte in the cell was found to be very weak (specific gravity 1.035). Please determine the total weight of sediment, percentage of iron, nickel and mercury, etc.

Walter E. Holland

WEH:EEB

November 11th, 1911.

Electra Cycle Co.,  
85 Horton St.,  
Detroit, Mich.

Gentlemen,-

We have sent you the following telegram today,  
by Western Union Telegraph.

MR. EDISON REQUESTS TELEGRAPHIC  
ANSWER IF YOU WILL SHIP ELECTRIC  
CYCLE AS PER MY LETTER OCTOBER 20TH  
AND IF SO WHEN.

M. R. Hutchison.

P. O. Box 478

## ELECTRA CYCLE CO.

CORNER FORT AND 10TH STS.

DETROIT, MICH. Nov. 11th. 1911

Mr. Thomas A. Edison,

Orange, New Jersey.

(attention of Mr. M. A. Hutchison)

Dear Sir:-

Your telegram received, which together with your favor dated Oct. 20th. was given to the writer for reply.

We regret very much that we are not in a position to comply with your request at the present time, and it now looks as though it might be another 60 days before we can again take the matter up with you in earnest.

The delay at this time is largely due, first to the reorganization of the above company, largely for the reason that we think there will be a greater demand for a machine such as we are planning to manufacture than the former company was prepared to produce, second because of the writers absence from the city, and still further delay because of several improvements we are making at this time.

We appreciate the spirit of your letter and will be glad to take the matter up with you again just as soon as possible to do so, and will be pleased to have a personal interview with you when the time comes if thought best to do so.

Thanking you for the interest you have shown, we are,  
very truly yours,

The Electra Cycle Co.

*Chas. Lobdell True*

BL/L

BATTERY STORAGE

Sunday, Nov. 12, 1911.

McLellan  
Ev. Work

Representative of "American Addressing & Mailing Co., N.Y., will be out Monday with prices &c of lists of Architects, Minis, &c. for circularization, one at a time, including cost of mailing and addressing from New York direct.

2. Have written E. V. Hartford for permission to send photographer to his Summer home to photograph Edison Battery Lighting plant. Also for data as to size & make of engine & dynamo etc.

3. Have telegraphed for date of shipment of Electric Bicycle.

4. Have written for prices on Tricycle to equip with motor & Battery.

5. Have ordered an invalid chair etc.

6. Have telegraphed my man Stephenson, in Saylor, to come & arrange and talk about taking hold of circularization with Billy.

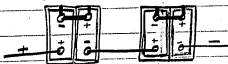
7.

- 7- Am getting up an electric reading lamp to run from 5-134 cells, for proper affected with gas in residue as I am.
- 8- Lawn mower Battery - motor output is designed and ready for work. Man put on it.
- 9- See Invoice about advertising stunt he has worked up for me with Small machine. Good.
- 10- Have had my letter re. Klaxon Battery photographed and printing 10,000 for mailing.
- 11- Have finished Scientific American Ad. + will send over for your approval.
- 12- Am getting photograph of launch that sank with Edison Battery (OH)
- 13- Preparing circular letter to electrician shops in all cities calling attention to loss of current in flaming arcs, + use of Edison Battery to prevent. They will get after flaming arc users + wire them

up to use Edison Battery they will sell to them.

- 14 Write Anderson advising him to get reprints Army & Navy Journal ad's from Publishers (we need for us to furnish them to him) to distribute as he sees fit.
- 15 Taking up with Chemical Buyers disposition of the 100<sup>lb</sup> Copper Oxy Chloride we will have as out put by product daily, from Battery Co. Letting Bot do this so he will feel O.K. about it.
- 16 Sending <sup>detail</sup> report of Smith on Dan Chad cells, to Ford, with letter. Will send letter to you to read.
- 17 Posting notices in Lab & Battery Wakes that reprints of Army & Navy Journal can be had for asking through Foreman & Supts.
- 18 Trying to get 6 copies Exide Directions
- 19 Made up 4-B<sup>2</sup> cells Standard. Going to charge & discharge 10 cycles & get individual characteristics (Smith). Then divide into

pairs, grounding + and - of each pair on cans, connecting cans together, assisting cans with jumper, making the 2 pairs in series. 6 months test. Want to know result for room saved in Submarines especially if it works.

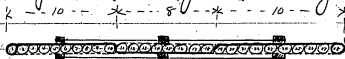


Will see TS characteristics of cell <sup>from initial,</sup> run, after connecting thus.

20. The short tubes ( $\frac{1}{4}$ " I had made up with flakes + a  $\frac{1}{16}$ " nichelid iron wire through center showed up high on 3 hour discharge. In her tests now.

Have 6 long tubes ( $\frac{1}{4}$ " with flakes, and  
6 " " " with wire + flake  
made up to run on 3 hour discharge together. All same hydrate. Want to settle this idea one way or other, with modern tubes because it ought to improve  $\frac{1}{4}$ " tube internal resistance on heavy discharge.

- 21 Smith is now running two B<sup>2</sup> cells I had made up with  $\frac{3}{32}$ " sheet strips across middle of tubes ( $\frac{1}{8}$ " ),  $\frac{1}{16}$ " separator between plates etc as follows.

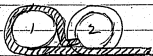


Tips of separators slotted and force them hard rubber inserted and touched with hot iron to secure.




2. Strips. Each end securing as shown.

- 22 Jam having made up two more B<sup>2</sup> cells with .040" space between plates and with one piece of  $\frac{1}{32}$ " wide steel strip fastened as follows -

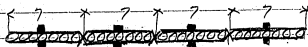


with 3 pin separators as in (21).

23. Another one with only two rows through  
  
 and two pin separators, .040" space.



24. And another B<sup>2</sup> with four narrow  
strips - , .040 space & 4 pin separators.



25- Same as 21-22-23-24, with strips and metal to rig.

26 Will run all in 33% KOT &  
See which stands up Best.  
Am in a hurry to determine  
this for my submarine cells.

27- Have subscribed to jazz in Annapolis  
midshipmen's Year Book "Lucky Bag"  
that goes to all offices of Annapolis  
and all midshipmen. Good joke.

28- Am revising instructions in Edison Battery  
handling, for complicated now. Will  
give you same for criticism when completed.

29- House Lighting - Have handed Mr.  
Meadows a rough draft for polishing.  
Consider two booklets necessary - one for  
architects & builders, one for  
non-technical people. The former  
can be short and pretty, the latter  
nicely illustrated & attractively bound.

1952  
11/13/11  
Theo W. Vail -

Presht Amem Bell Taylor

My Dear Mail =

my  
11/13/11

I have perfected my storage  
battery so that I believe  
I can substitute the ~~to~~ lunch  
battery in the telephone in  
house with a ~~battery~~ storage  
battery ~~requiring~~ taking up  
the same space & it will  
hold its charge for at least  
one year, and be good for 20 years.  
The cost of recharging would  
only be a few cents, if you  
think such a thing desirable.  
Please send one of your telephone  
experts over to investigate &  
report.

I will sign

RAILWAY EQUIPMENT.  
CAR TRUSTS.

ROBERT COLWELL,  
20 BROAD ST.  
—  
ESTABLISHED 1870.  
—  
TELEPHONE 5155 BOSTON.

NEW YORK, November 14, 1911. 100

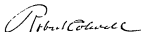
Mr. William H. Meadowcroft,  
Edison Laboratory,  
Orange, N. J.

Dear Sir:-

Referring to my visit and conversation with Mr. Edison on Friday last, I would like to have another interview with Mr. Edison on the subject matter of financing the deferred payments of railroads that install the Edison Storage Battery in lighting passenger cars. I will bring with me the form usually used in making up "Car Trusts," of which I have financed many millions in the past 25 years.

Almost any day and hour between 11 A.M. and a P.M. would best suit me.

Truly yours,



RC/SL

FORM 23

*B.S. G*

SUBJECT: Edison Storage Battery.

61121

AMERICAN TELEPHONE AND TELEGRAPH COMPANY.

15 DEY STREET.

JOHN J. CARTY,  
CHIEF ENGINEER.

NEW YORK. November 16, 1911.

Mr. Thomas A. Edison,  
Orange, N. J.

*NOV 17 1911  
Am 11/17*

Dear Sir:-

Owing to Mr. Vall's absence for a few weeks in California I am answering for him your letter of the 13th of this month regarding the use of your storage battery instead of primary batteries at subscribers' stations. I have directed Mr. L. F. Morehouse of this office to thoroughly investigate the subject. He will get in touch with your laboratory and arrange there with whoever may be designated by you to take the matter up with him.

Yours very truly,

*J. J. Carty*  
Chief Engineer.

JJC-EMR.

*Dr. G. S. said Morehouse - over any time - ask on phone - day to make sure I will be home on the day he decides to come*  
*E*

H  
TAE

November 17, 1911.

Electra Cycle Co.,  
Fosh and 10th Sts.,  
Detroit, Mich.

Gentlemen,-

I am in receipt of your  
letter of November 11th.

I note you are in a position to take up the matter at the present time, so suggest that we let the matter drop, until you are ready to do so.

Yours very truly,

Chief Engineer of Mr. Edison.

Nov. 21, 1911

Mr. Goldstein:

I am sending here with a sample of electrolyte from an A's battery taken from a 3½ ton "Atlantic" truck, Nov. 15, 1911. Please analyze this for  $\text{KOH}$ ,  $\text{SiO}_2$ ,  $\text{K}_2\text{SO}_4$ , and  $\text{K}_2\text{CO}_3$ ; also give specific gravity.

Please send me a report on this as soon as possible, as this battery has given trouble which we cannot explain.

#171 W. E. Holland

*Secretary Genl*  
GENERAL ELECTRIC COMPANY  
WEST LYNN, MASS.

In Reply Refer to

November 23, 1911.

Mr. Roman A. Edison,  
Orange, N.J.

*File*  
NOV 24 1911

Dear Mr. Edison:

Since calling on you last Friday, I have discussed matters appertaining to the use of your storage battery with a number of my Associates, and some of the principal Executives of the General Electric Co. I feel very sure that the results of this discussion will be prompt and I hope to your great satisfaction.

Yours very truly,

FMK:MEH

*Wm. M. Kinnear*  
MANAGER.  
SMALL MOTOR DEPARTMENT.

GEORGE HENDEE, PRESIDENT & GEN. MGR.

FRANK J. WESCHLER, TREASURER.

OSCAR HEDSTROM, V. PRES. & MGR. ENGINEER.



# THE HENDEE MANUFACTURING CO.

PAID IN CAPITAL \$2,600,000

Springfield, Mass. Nov. 23, 1911

"LIKE A FLASH"

Ans 11/27

*Handwritten signature/initials*

*any I will be  
at laboratory  
Wednesday & Thursday  
next week*

Mr. Thos. A. Edison,  
Orange, N. J.

Dear Sir:

I have just returned from an extended trip in the West, and your very kind favor of Nov. 17th has been handed me. I should be very pleased indeed to visit you and talk over the question of Edison battery and electric motor for motive power on motorcycles.

Wishing to conform to your convenience, I will kindly ask you to make an appointment for any day next week.

Thanking you for this opportunity to go into this matter with you, and awaiting your further advice, I remain

Yours very truly,

*Geo. M. Knude*

Dict.  
GMR/J

*Have you got data on  
our factory. Later  
I will call on you  
I will call on you  
I will call on you*



#170

Nov. 24, 1911.

Dr. Goldstein -

A number of cells at the New York Navy Yard have shown up poorly and it may be due to bad electrolyte. We suspect that possibly acid or some <sup>other</sup> foreign substance has gotten into the solution. Will you please make such tests as will determine this and let me have a report not later than Monday. A man will leave here Tuesday night taking an early Tuesday morning train for New York and I am anxious he should have some information about this before he goes.

W. H. Smith

December 2nd, 1911.

MESSRS: EDISON AND DYER:-

Please note that we have this morning received the following orders:

|                                |            |
|--------------------------------|------------|
| T. A. Edison, Inc. (Australia) | \$1200.00  |
| 60 A-6 .....                   | 1350.00    |
| 100 A-4 .....                  | 1520.00    |
| 190 B-4 .....                  | 1380.00    |
| 230 B-2 .....                  |            |
| T. A. Edison, Inc. (Canada)    |            |
| 216 A-8H .....                 | 5616.00    |
| Adams Express Co., N.Y.C.      | 6696.00    |
| 496 A-4 .....                  |            |
| Geo. W. Holden, Boston, Mass.  | 416.00     |
| 52 B-4 .....                   | \$18178.00 |

HRL/JW.

*W. J. Dyer*

*BATTERY STORAGE -*  
*Went to tell Fox to hold up*  
*Holland's paper as we have sold*  
*get around the cold*  
December 1, 1911. *S*

Copy of letter received from M. E. Fox, from St. Petersburg, Russia, dated as above.

The Tudor Company originally wrote a letter to Captain Asvelief's friend, who sent a copy of same to the Government Inspector at the Nevsky Works, and the latter loaned it to the engineer of the Nevsky Works, who loaned it to me. I have not seen the original letter, but only a copy, a facsimile of which I enclose herewith, witnessed by the Nevsky Engineer.

Now, truly, I can see no grounds for proceeding against the Tudor Company, since they only say that the battery is not suitable on account of Smith's report (the Hamburg Fire Chief) which in Russian, accompanied their letter. When the Nevsky engineer first translated the letter to me, he read it as if the Tudor Company had mentioned things hostile against the accumulator, but when you translate the letter, you will see it is not so.

I have not enclosed Smith's report in its Russian form, since you probably have a copy in the original German. He is the man to jump on.

I have made an appointment with General Brink's office this week, saw General Dubroff, his assistant, who said the former would not be here Tuesday. I had made an appointment to meet him Wednesday, and I think my work will be through here.

I saw the Chief of the Telegraph Department of the Army in regard to our battery for field service. He said they used primary batteries for this work, so as not to require charging apparatus in the battle field. There might be a place for our product in connection with wireless stations, but that the matter should be taken up with their furnishers of signal apparatus, the Siemens and Halske, and "La Societe Russo Telegraphie sans fil", both of this place, since the Russian Spy an entire apparatus and the battery is merely a detail. However, if you wish to communicate with this Russian Office, in future, here is his address - - - -

They have a disconcerting way here of giving one an interview, in an anti-room in the presence of other people, so that privacy is impossible. While I was talking to the officer, there was a well dressed civilian in the room, and when I was going, he addressed me in excellent English, "You are from the Edison Company, I know. We are customers of yours, that is, your German Branch. I would like to have an interview with you."

I was surprised, but took his card, and made an appointment with him at his office, for the next morning. I didn't know what I was falling into, so many queer things happen here.

His card I enclose. Its English translation would be

somewhat as follows,

Roman Romanovitch Kolby,  
Engineer,  
Representing the technical firm of  
R. Kolby,  
36 Boznessensky Prospect,  
St. Petersburg, Russia.

His firm has a large place, and the business would correspond to that of an engineering contractor in our Country. He said he had heard me talking about the Edison Battery, and was wondering why an American Representative should be here, since he had thought the German Company handled this business. I explained that I was showing up the new type Edison Cell, with which Bergmann was not supplied.

He is, it seems, one of Bergmann's customers, as he carries our cells along with several lead types in his catalogue. His query was as to whom he would do business with in future.

I told him that we were making plans for reorganization, and that things would probably be settled within a month, and that I wasn't at liberty to say what these plans were at present.

He stated that he was strongly entrenched in the Artillery Department here, and had sold many of Bergmann's mining lamps to them, and suggested that we allow his company the agency for Government work. He seconded this by saying that if more than mere worth of an article to get it into the administration, but that he felt that they were in a position to do it.

I said nothing about de Passano or Monnot, but told him we would consider his proposition, and let him know later. This then is for your information. I have no comment to make.

Mr. Kolby is personally acquainted with Mr. Kammerhoff, and he can probably tell you more about him. He showed me an auto-graphed photograph of Mr. Edison taken some twenty years ago, I should judge, bearing the inscription, "To R. Kolby, from Thomas A. Edison." It was given to his father, but he did not know the circumstances under which it was given.

He showed me through the work-shop where they were manufacturing various appliances for lighting of warships. He evidently judged me discrete enough to see these secrets. Captain Pisseauf wants to write in his Army Journal a series of articles dealing with the modern Edison Battery. He says his colleagues are all anxious to know about it, and he wants to tell them. Among other things, he wants to put in Holland's Temperature Paper, which he says he will translate. I told him we would have no objection to his writing a description of the cells, and I am furnishing him with this in French, as I thought it better to take the matter up with you before putting in Holland's Paper.

Personally, I think it is a rather exceptional opportunity. We will get good advertising with its costing us a cent, and Pissauf is a man who knows what he is talking about, having written several technical books. I will give him Holland's paper when I leave here, and if for any reason you do not wish this, telegraph me wherever I may be, and I will stop it. Holland's paper would not appear for two months yet. I urge you to tell him, "God bless you." However, I thought it best to mention the matter.

Yours sincerely,

Maurice E. Fox.

P. S. Let me remind you that Dr. Goldstien, the chemist, is a Russian, if you need a translator for that letter.

#115

12-12-11.

Dr. Goldstein -

Will you please make the regular sediment and alkalinity tests on the electrolytes from the following cells:

15654 - filled always with tap water instead of distilled

2752-3-4 - these cells have heavy iron probes in neg. plates

10794-5 Original solution 21% KOH + 50% Li

10796-7 " " 21 " + 60 "

10798-9 " " 21 " + 70 "

10800-1 " " 21 " + 80 "

10802-3 " " 21 " + 90 "

H. H. Smith.

V

December 18, 1911.

Mr. Edison,-

In regard to attached memorandum  
from Salzman,-

You authorized me to have these six  
cells constructed at once, in order that the  
Banner Safety Lamp Company man could get them  
to put in the lanterns he had constructed, to  
be submitted as samples for test to Fort Han-  
cock.

The Government is going to place an  
order for 2,500 of these lanterns, the first  
part of February. The uncle of D. Robinson,  
F. B., who is connected with the Banner Safety  
Lamp Company, is a Government Officer who is  
going to place these contracts. Mr. Robinson  
is relying on us to supply the Edison Battery  
for them, and is not entering competitive lamps  
with lead battery. He does not care whether  
the batteries leak or not, as these lamps are  
supposed to stand upright. Therefore, can we  
not please construct these six cells immedi-  
ately, as I promised Mr. Robinson we would do,  
after he talked with you the other day, in my  
presence.

K. R. HUTCHISON.

#176

December 20th, 1911

Dr. Goldstein:-

I send you herewith two A-8 cells, Nos. 6954 and 6971. These cells are from a 60 cell battery returned to us on December 13th by the Atlantic Truck Company on receiving report No. 3622. Among the battery of 60 cells eighteen cells showed signs of great heating and on cutting some of these open it was found that the tops of the plates were corroded for two or three inches down apparently from acid which had been added to the cells.

The two cells I send you have not been touched or changed in any way since receiving but show signs of great heating as did the ones we cut open and found corroded.

Mr. Edison desires to have a complete analysis made of the solution in these cells and of the sediment also to determine just what chemical may have caused corrosion of the tops of the plates.

#176  
This battery was sent in to us in November also, by the Atlantic Truck Company and about one-third of the battery was found to be low in capacity. We changed the solution in the low cells and their capacity came back. The whole battery was then given back to the Atlantic Truck Company in good condition. The two cells I send you were among the ones that were low in capacity when we had them here in November, and the solution was renewed in them on November 15th so that any impurity found in the solution must have got in since that time.

Kindly report on this to Mr. Edison and to me at your earliest convenience as it is a very urgent matter.



W. E. HOLLAND  
W.E.H.

✓



## CHARGING THE STORAGE BATTERY

Profitable Business for Central Stations, Suggests an Electric Light Man—Inconsistencies of Some Stations.

Deprecating the lethargy of electric light companies in general, Walter E. Rogers, who is a British electrical engineer of considerable reputation, advances the note unheard of theory that in the charging of small accumulators by central stations direct—such small accumulators as lately have become more common than ever, owing to the general adoption of electric lights for automobiles—there slumbers the germ of an exceptionally profitable business.

"In these days when so much is said, and more written, about day load for the electricity works all over the world," he says, in expounding his views in the Electrical Review, "it is a matter of surprise to me to find that while our chiefs are inserting advertisements for representatives to push the installation of cooking and heating appliances, etc., little or no attention is being bestowed upon a class of small day load which may be cultivated actually at the generating station with practically no outlay for mains, sub-stations, etc."

"One of my late chiefs," he continues, "did everything to discourage cells being sent to the works to be recharged, by charging for them at exorbitant and prohibitive rates, because, he said, they were a bother. Yet he would go miles to secure a five-horsepower motor consumer, and would be very sarcastic to the mains superintendent over delay in connecting a 3/4-horsepower potato peeling machine, which entailed a capital outlay of perhaps \$50 and a revenue of less than a dollar a year."

But even in cases where motorists are catered to, more or less, conditions are, in his opinion, very bad, to say the least. "Looking around such works," he continues sarcastically, "what do we find?" And proceeds to answer the propounded question himself:

"In the meter room, or shift engineer's office, there is a piece of acid-tanned and fly-sprinkled flexible cord, a corroded lamp-holder and, perhaps, one small celluloid box being charged, price 12 cents. Yet, again, I find a board equipped with batten lamp-holders and, sometimes, a quite unnecessary ampere-hour meter. I say unnecessary, because it is pretty well known that 110 volts a 32-candlepower carbon-flame lamp takes one ampere approximately, a 16-candlepower 3/4 ampere. At high voltages the current is proportionately less for the same candlepower. An ammeter may be a useful adjunct to the charge-unit, but the only instrument really necessary is a portable voltmeter, reading 100 volts."

"In some provincial towns where I have resided, every motor engineer, garage, cycle repairer, plumber, etc., has had his own charging equipment supplied from the street mains via the shop lighting, etc.; the local station man rejoicing in the fact that he was charging a number of accumulators through lighting meters—i. e., he was obtaining six or eight cents per unit for what might have cost him no more power load. This, of course, sounds very nice, and relieves the works of all trouble and the usual row which takes place when Alderman Grouser's old battery happens to have been put on charge the wrong way round, as is invariably done sooner or later. But it does not tend to popularize electricity when the local paper comes out with an account of the destructive fire which gutted Mr. Grouser's premises last night, caused by the fusing of electric wires, and the usual stock comments thereon."

"What really happens is that just as the electrician of the particular motor hodge-podge is leaving in the evening, a 10-ampere-hour battery in a celluloid case is brought in to be charged by 9 A. M. tomorrow, as the owner wants to start for Finchley on his new 'Rolling Romper' at that hour. Our electrician places it on the wooden window ledge where there are already three other similar batteries on charge adjacent to two tins of cycle oil, a curtain, and some dirty water. To connect the battery, he takes a piece of wire, bare or insulated, it matters not, and twists it round a terminal, switches on, and bolts for his tea. Nothing happens at once, but after a time heat begins to make his presence felt at the terminal which has the twist of wire round it. This is aided by the battery being wrong way round. From this point it is not difficult to trace the sequence of events from the time the celluloid ignites to the arrival of the fire brigade and the fusing of electric wires, etc. Anomalies is where the brass screw of a terminal is actually burned, or more often, soldered into the lead; here corrosion frequently takes place, and the terminal nut being too stiff for fingers, having learned that nuts should always be tight, we assist the coming fire by the none too gentle use of a pair of pliers."

"Since the occasional ignition of a celluloid battery appears inevitable, even when proper treatment is accorded, it being only a question of a sufficient number of cells passing through the individual's hands for one to be destroyed sooner or later, steps should be taken to minimize the damage when the conflagration has started. An old discarded fire-pail, provided there is a chimney, affords a convenient charging station, as can usually be found. Procure a lead-lined wooden tray, which roughly speaking, should be fan-shaped. Place the fan-handle at the back of the fireplace, the tray being horizontally propped up in front on bricks; then, with ordinary care, no dam-

age will be done to the surroundings when the flare-up comes.

"The installation of a separate meter for charging secondary cells at every charging station throughout the town, in order that energy may be sold at power rate, is objectionable. All I have written, of course, directly concerns the direct-current station only, but now that the mercury rectifier is a practical success in all but first cost, our alternating-current friends may expect to hear some more about 'fusing of electric wires.' One station in London, with which I am acquainted, commences by posting up in a conspicuous place, where a person handling a battery can read it, the following:—

### NOTICE.

#### Recharging Accumulators.

Whilst every care is taken of batteries, the company cannot accept responsibility in regard to damage done, or defects arising in the course of recharging. The leaving of batteries for recharging is taken as an acceptance of this condition.

"I have not copied the above as a sample of English, nor can I advise upon the strict legality thereof, but I give it simply to convey a hint to the unwary, as damage, either genuine or imagined, will undoubtedly arise when any number of batteries are dealt with."

"For instance, say it is the switchboard attendant's duty to look after these cells. However much he knows about peroxide of lead, it is not right to expect that he can invariably sandwich the duties of synchronizing an alternator, just as load is coming on, with connecting up a small battery correctly as regards polarity, time and hard usage having frequently obliterated all marking on the box. So that occasionally a mistake will be made, with disastrous results as far as the particular battery is concerned. It must also be remembered that quite a lot of batteries brought in will be completely exhausted, as Mr. John Doe, whose license bears endorsement, knows nothing, and cares less, about 18 volts per cell a minimum, beyond which he should not discharge."

"Having got to work and commenced to charge, one quickly discovers as gassing takes place, that the vents provided with many cells are totally inadequate and unable to pass away the gases formed. Quite 20 per cent. of the cells brought in will require filling. Here is a small difficulty, for not one cell in a hundred is designed to admit a hydrometer, or even to allow the use of a suction or pump hydrometer, by which the electrolyte is drawn into a tube, thus providing sufficient vertical height to float the instrument for ascertaining the specific gravity of the liquid. Again, many of the cells brought in in connection with portable lamps, etc., will have microscopic apertures which admit of introducing acid or water."

HAND THIS TO

MR. Edlson

Remarks

much detail answered  
this article in Edison  
Battery News 1/10/11

[ATTACHMENT/ENCLOSURE]

Battery Storage -

~~4680 -~~ 4768<sup>c</sup>

It aint worth

answering

However we could  
get some free advt  
from it

{

Manuscript

figure out Cost A4 Gallery

Excluding Selling exp. &  
weekly expenses, interest

on bonds, rent, &  
office exp. & mail

to me & Mrs Morgan

Hays & Co Paris →

BATTERY -  
STORAGE (1911)

Sketch =

For testing Bismuth use B4 Cells

Make set tubes the perforated strips having  
twice as much a plating of Nickel as  
Regular - Use the 12% Bismuth  
Nickel, Smith form them in Reg  
way as we do regular Nickel  
Cells - don't try stunts on forming  
just want to try the double  
plating =

~~Put them in~~ after  
test a day runs or so  
take out elements & put into  
a new can the inside of  
which has the nickel plating  
removed by coarse Emery paper  
& then reassemble & run cells  
Nickel Connected to Can  
Edison

## Meadcraft

Bergren brings me every  
week sales of all the Co.  
Each week copy the orders  
for that week & mail Care  
Morgan H & Co Paris -

also get full Co Muster  
Patterns assembled  
& shipped & orders  
each week - mail  
also,

2

17.5. - Ed. Hand

Bliss → 1

We want a good headlight  
on 1 Horse ~~to~~ 2 wagon  
for night running

?

PRACTICAL ADAPTATIONS OF THE EDISON STORAGE BATTERY.

(Compiled by M. R. Hutchison.)

FOR THE PROPULSION OF-

1. Electric terminal locomotives. (A special type of battery which can be charged and discharged at a very high rate.)
2. Mining locomotives. (Not affected by concussion of rough handling as in coupling the train up, etc.)
3. Industrial plant locomotives. (Displacing the dangerous steam, compressed air, and super-heated steam locomotives).
4. Industrial plant indoor trucks. (A number of hand truck manufacturers are going into this field. The field covers handling baggage, freight on piers, machine parts in factories, etc. etc.)
5. Fire Engines and fire trucks. (Much more dependable than the gasoline engine. Always ready. Might be able to interest the American La France Fire Engine Co. in Newark).
6. Lawn Mowers. (Horses disfigure lawns by their hoof-prints. Gasoline engine lawn mowers are not perfected yet. There is no reason why the electric lawn mower will not surpass all other forms of power for this purpose.)
7. Road rollers. (Road rollers must have weight. The steam engine is obnoxious in cities, and will not be tolerated very much longer. Might try to interest some of the road roller manufacturers in this electric proposition.)
8. Street railway cars.
9. Interurban cars. (The same form of battery that we use in electric terminal locomotives can be used in interurban high speed cars, thereby overcoming the loss of transmission of the current over long feeder wires, and making the system operated through sleet and storms, which now incapacitate them.)

10. Railway inspection cars.

(Much more reliable than a gasolene propelled inspection car, as it is not so liable to break down on a main line with consequent danger from trains colliding with it).

11. Street sweepers and sprinklers.

(The wear and tear on clutch and gear shifting mechanism is so great, that street sweepers and sprinklers have not yet come into general use. The electric street sweeper or sprinkler is far superior.)

✓ 12. Electric omnibuses.

(Far superior to the gasolene, because of absence of wear and tear on clutch, gasolene engine and gear mechanism.

✓ 13. Electric trucks.

✓ 14. Electric pleasure cars.

15. Electric motor cycles.

(There is already one motor cycle manufacturing concern that is turning out electric motor cycles. They now use Edison Battery as well as lead. Any of the bicycle magazines contain the advertisement.)

16. Taxicabs.

The current taken out of the battery in a ten mile run can be put in again in ten minutes. A five mile run in five minutes, etc., up to about 20 miles, when it will take longer, as the battery cannot then be charged at such a high rate, unless it is very well ventilated and cooled.)

17. Electric farming machinery.

(A gasolene engine, or any other combustion engine in a wheat field is a dangerous proposition. After the wheat is dry and ready for stacking and gathering, a fire will do a good deal of damage.)

✓ 18. Submarine boats.

(This matter is in Mr. Hutchison's hands.



✓ 19. Electric launches.

(Excellent for inland lakes, but for heavy sea work, such as on the Atlantic Coast, the gasoline engine is superior, because of its lighter weight, thereby greater sea-worthiness of the craft).

20. Short trip ferry boats.

(Many street railway lines, etc. operate short ferries. An example is at Rochester, N. Y., where a small ferry boat runs from the Yacht Club to the other side of the river - only about 350 feet. It is propelled by a steam engine, operating on a chain that lies at the bottom of the river. Two men necessary to operate this boat, licensed pilot, and licensed engineer. Could be operated by one man if Edison Battery installed to operate the chain driving mechanism. Charging can be done at one of the terminals, as the boat lies for five minutes at each end between trips.)

✓ 21. Electric torpedoes.

(In Mr. Hutchison's hands.

OPERATION OF

1. Klaxon Warning Signals.

(There are over 60,000 Klaxons and Klaxonets in use today in the U. S. alone. Each of these Klaxons and Klaxonets is operated by a battery of some kind. The majority of the batteries are lead storage-batteries. The most universally used Klaxon, type L and the type S, take our standard B-2 or B-4 ignition sets. They are wound to run from 6 volts, and take about 7 amperes. Their use is of very short duration each time when they are blown, and therefore, it can be briefly stated that a Type L or Type S Klaxon can be operated for one year from a B-4 ignition set, without re-charging or without the addition of any water. This has been done for the past two years on the car of Mr. Hutchison, the inventor of the Klaxon. See curve No. 48, copy of which can be secured from Mr. H. H. Smith of the Laboratory. The Klaxonet can be run for a year on a B-2 ignition set, without re-charging or the addition of any water. Of course, it is advisable to add distilled water about every three months; the battery need not be re-charged oftener than once a year. All bonifide dealers, and jobbers in the U. S. handle Klaxons and should be approached on sale of Edison Battery for this purpose. The same battery can be used for ignition and for operating the lights, but of course, if an increased load is put on it, it must be charged oftener.)

2. Automobile ignition systems.

(Where the battery is used simply to start the engine up, and for that purpose alone, it will operate for at least two years without re-charging, but water should be added about every three months. I refer to the B-4. The B-2 should do this work for a year, without re-charging. Where the B-4 is used for ignition all the time, it should be charged about once every

four months. The B-2 about once every two months.)

3. Gas engine ignition systems.

(There are a large number of gas engines in industrial plants, most of them being ignited by battery. They run usually about 10 hours a day, and under such circumstances, the battery should be charged about once every month, if the B-2 is used, and about once every two months if the B-4 is used.)

4. Motor cycle ignition systems.

(The small cylindrical type Edison Battery, taking up less room and not weighing as much as the standard dry cell, can be used for ignition on motor cycles. At present, dry cells are used universally on motorcycles for ignition, except on the more advanced types that have magnetos. The same battery will operate the lighting system of the motorcycle, which is, at present, deficient, relying solely upon acetylene, or kerosene lamps. All the motorcycle manufacturers should be canvassed in this matter and dealers and jobbers seen.)

5. Automobile and gas engine electric self-starting.

Apparatus

(Within the next year or two, no car of gasoline engine operation will be started by the crank, as now obtaining. Various forms of self-starters, including motors, which act as generators to recharge the battery after the car is started, and simple motors alone, operated by Edison Battery. This starting of a gas engine requires very heavy current. A lead battery will deteriorate under such treatment, because it amounts almost to short-circuit. The Edison Battery is the best adapted to this work. All the automobile manufacturers should be seen, especially the Cadillac Co., who are now turning out such a device, E. V. Hartford of the Hartford Shock Absorber Co., has also gotten out an electric self-starter, and, as he has one of the Edison Battery outfits installed at his summer

residence for lighting, he is very partial to the Edison Battery. He should be seen at once. His address is Jersey City, N. J.)

6. Electric cranes and hoists.

(The manufacturers of these should be interviewed, as they now operate by trolley. Owing to the flexibility of control of an electric motor, it is best adapted to crane work. The manufacturers of all cranes should be interviewed in this matter.)

7. Electric lifting magnets for cranes.

(Practically all the iron rails and other magnetic substances are loaded on Lake steamers by large electro-magnets. If the power circuit goes off while the magnet has a load in mid-air, the load falls and is apt to injure somebody, or sink the steamer. If these magnets are operated by storage battery, this contingency will not arise. The electric crane and hoist people should be seen. There are a number of advertisements in the "Electrical World" and other technical papers by manufacturers of electric lifting magnets for this purpose.)

8. Electric Hoists for mines.

(Each mine should be equipped with a reserve battery, so that in case anything happens to the power circuit operating the mining hoists, the battery will furnish the current. In such case, the battery can be charged about once a month, and held in reserve. It need not be a very large battery, only of sufficient capacity to operate the hoists for say, one half day, and if proper pressure is brought to bear, through Washington, Department of Commerce and Labor, mines can be compelled to put in auxiliary power for this purpose).

9. Electric central station over-load switches.

(All big central stations have main switches which are operated by batteries when the over-load comes on. These batteries are floating on the line normally.

COPY

May 26th, 1911.

Mr. D. Basch,  
Switchboard Engineer,  
General Electric Co.,  
Schenectady, N. Y.

My dear Mr. Basch,-

When I returned to the Laboratory the other day, after having discussed this matter of operating your switches in power stations, I had a type A-4 and a type A-8 battery put on test, to enable me to determine just what type is best suited for this service.

The type A-8 proved most satisfactory, the discharge voltage on 400 amperes being as follows: At the end of 1-1/2 seconds voltage 1.04, at the end of 1-2/5 seconds voltage 1.017. At the end of 2-3/5 seconds voltage 1.015. At the end of 15 seconds voltage 1.

It is, therefore, evident that by using 80 type A-8 cells, you can float them on the 125 volt line and be sure of 80 volts at 400 amperes, whenever the direct circuit breakers need them. You can let these batteries remain floating on the line for long periods of time, without further attention than replacing with water about once a week.

Yours sincerely,

(Signed) M. R. HUTCHISON.

All large power houses use this system, and should be called on. The lead battery deteriorates rapidly, by reason of its being on charge all the time, and being seldom used. The Edison Battery will stand this over-charging indefinitely without any injury whatever.)

- ✓ 10. Ordnance Gun-firing apparatus. (This is in Mr. Hutchison's hands.)
- ✓ 11. Ordnance gun handling motors, and turret handling. (This is in Mr. Hutchison's hands.)
- ✓ 12. Wireless telegraph apparatus. (A law will soon be passed necessitating the equipment of all wireless apparatus with a reserve storage battery. Mr. Hutchison attends the meeting of the Board in Washington on the 26th instant, and will advise later as to the best method to pursue in this connection.)
- ✓ 13. Wireless telephone apparatus. (This is only coming into use gradually, and work thereon will be of little avail at the present time).
- ✓ 14. Military portable wireless apparatus. (This is in Mr. Hutchison's hands.)

- ✓ 15. Military portable telegraph apparatus. Ditto.
- ✓ 16. Military portable telephone apparatus. Ditto.
- ✓ 17. Fire control apparatus, for Army and Navy. Ditto.
- ✓ 18. Fire control telephones for Army and Navy. Ditto.
- ✓ 19. Harbor mines. Ditto.
- ✓ 20. Railway signal apparatus.
- ✓ 21. Railway turn tables.

(This is coming into use and the business is being handled by Mr. Thompson.)

(Mr. Thompson should be given latitude to enter this field, as a good many turn tables are operated electrically.)

22. Air brake motors.

(On the system designed & patented by Mr. Hutchison recently, the current going through the arc light on interurban cars, when the car is in the country, charges storage batteries. From these storage batteries, power is derived for operating the air brake motors, lights of the car, and electric warning signals. The power thus saved is now thrown away by resistance in series with the arc light to cut the voltage down from 500 volts to 45 volts for use of the arc light. The battery in series with the arc light takes the place of some of this resistance, Mr. Thompson has this matter in hand.)

23. Blasting apparatus.

(Electric setting off of blasts is universally used in all mines and quarries. The B-2 or B-4 cells is excellently adapted to this work. It should be worked up and companies manufacturing such apparatus should be interviewed.)

24. Local telegraph circuits.

(The current for operating the sounder in the local station is now derived from the old type of blue vitrol cell. One or two B-2 or B-4 cells would operate a sounder satisfactorily for a very long time. It is doubtful, however, whether the telegraph companies, rail road companies, etc. will abolish the blue vitrol cell

- for this more expensive Edison Battery as the blue control cell is giving very good satisfaction.)
25. Burglar Alarms. (The American Telegraph and Telephone Co. use a large number of storage batteries for operation of burglar alarms, and should be interviewed. There are also a number of private burglar alarm companies that should be interviewed.)
26. Fire alarms. (Every city and town in the U. S. that is equipped with a fire alarm system uses storage batteries. A town of the size of West Orange, for instance, uses a five ampere hour cell. The discharge current is very low. They have reserve battery, using one set of cells for 24 hours, and throwing it off and putting it on charge for 24 hours, while the other set is being used. The Gamewell Fire Alarm people should be interviewed in this matter, as well as all independent fire alarm apparatus manufacturers.)
27. Thermal Regulators. (The temperature of cold storage boxes used by butchers, etc., is regulated by a thermostat, which operates the electric motor to start up or stop the compressor, as the temperature within the storage box goes up or down from the critical point. Such manufacturers as the Brunswick Refrigerating Co. New Brunswick, N. J., and other manufacturers of refrigerating machinery should be interviewed.) The temperature of buildings also controlled by Thermostat.
28. Ventilating fans. (All mines are equipped with large, ventilating fans, usually electrically driven. In the event of failure of the source of supply of current, these fans should be operated by storage batteries. The Department of Commerce and Labor should be appealed to in this matter, along with the application for compelling equipment of a battery for operating the electric hoists. Ventilating fan manufacturers should be interviewed in the matter.)
29. Exhaust fans. (A great many manufacturers use exhaust fans for taking away gases, etc. from processes of manufacture. In the event of failure of the supply of current, these fans will stop. A storage battery installed to set in emergency will be advisable. Exhaust fan and ventilating fan manufacturers should be interviewed.)
30. Small fan motors. (The physicians and surgeons of the U. S. should be circularized on a complete small fan motor outfit with Edison Storage Battery, for use with their patients, during warm weather. The lives of Mr. Edison's chauffeur's wife and baby

were saved this past Summer by the use of one of the Edison small fan motors, operated by Edison Battery.)

31. Sewing machines.

(Large manufacturers of dress goods, shirt waists, etc. operate sewing machines. Sometimes the power goes off with consequent loss of time and it might be found advisable to see some of these people to determine if they would not be willing to put in an Edison Battery to be used in reserve. Sewing machine manufacturers should be interviewed with a view of using Edison Battery on their electrically driven sewing machines they supply to individual households.)

32. Vacuum cleaners.

(All the vacuum cleaner manufacturers should be seen, as many of them operate electric vacuum cleaners which cannot be used in many instances, because of the absence of power. A great many of these vacuum cleaners are installed in residences, where nothing but alternating current is available and only at night. With a rectifier to charge the storage battery, the direct current vacuum cleaner can be used, and it might be found advisable to take this up.)

33. Cigar lighters.

(All the manufacturers of cigar lighters should be seen, because they all use dry batteries for operating these cigar lighters. The American Electric Novelty Co. manufacture a cigar lighter. The American Tobacco Co. and the United Cigar Stores Co. could furnish a list of the cigar lighter manufacturers, that are the best, and they should be seen in this connection.)

34. Phonographs .

(The business phonograph would be used much more extensively in places not supplied with power for operating. This battery can also be used for operating household phonographs.)

35. Household moving picture machines.

(This little machine, which will soon be on the market, can be operated as to its light, by Edison Storage Battery.)



36. Local battery telephones.

(In all our urban districts and small towns, each telephone has two or three calls of dry battery for operating it. These dry batteries deteriorate rapidly, and it is a source of constant expense to the telephone Cos. to renew these. Telephone manufacturers should be interviewed on the matter of the cylindrical cell, as they will certainly come in to use for this purpose. The Stromberg-Carlson Telephone Mfg. Co. uses 80 carloads of dry batteries a year on the telephones they manufacture and send out. An Edison Battery should operate a telephone for several years without re-charging, as it is not in circuit except when the telephone is being used.)

37. Central battery telephone systems.

(All telephone manufacturers use lead storage batteries for their central battery. These will vary in size from the A-4 to the A-12, depending upon the load. The salesman handling the telephone business should study up on this matter by referring to curves of performance which we already have.)

38. Electric revolution indicators.

(There are a number of instruments made which indicate the successive revolutions of engines by contacts closed by the main shaft operating electro-magnet in indicating devices placed at various places about the premises, or about the ship, if used on board ship. The Edison Storage Battery can be used for this purpose.)

39. Door bells.

(Edison Battery of cylindrical form can be used for several years for operating door bells, floor pushes, etc., in residences, before it is necessary to re-charge them. The present dry batteries go out of use by reason of the high temperature of a house, dry heat, etc., in the winter time.)

40. Gas lighting apparatus.

(All gas lighting apparatus is operated by dry cells. The Edison Battery cylindrical form is excellently adapted to this, and will

run several years without charge. Gas lighting manufacturers should be interviewed).

✓ 41. Instruments for the deaf.

(There are a number of instruments on the market for enabling deaf people to hear. They are electrically operated. This matter is in hand, however, and needs no attention).

42. Factory machinery, lights, and temporary power from batteries on trucks.

(Garages have central stations equipped with electric trucks, and can let it be known among the manufacturers that power from these trucks can be supplied in case of emergency by running the truck to the premises, and connecting up to the power and lighting circuit on the premises. Manufacturing concerns etc., owners and operators of electric trucks can use their own trucks for this purpose.

43. Electric self-playing pianos.

(A number of these have come into use, and the self-playing piano people should be interviewed in the matter.)

✓ 44. Turrets on battleships.

(This matter is in Mr. Hutchison's hands.

✓ 45. Ammunition hoists.

(This matter is in Mr. Hutchison's hands.

✓ 46. Draw bridges.

(Mr. Thompson should be given latitude to talk Edison Storage Battery for the operation of draw bridges, because when the draw is opened, unless cable is run to the motor, electric motors cannot be used for the purpose. The motors can be charged when the draw is in place, and the draw operated by motor. This would save keeping up steam on a steam engine on the draw, and should be pushed).

47. Portable electric drills.

(These drills are coming into use universally in garages, etc., and many times on outside jobs, they cannot be operated because of the absence of power. The portable drill manufacturers should be interviewed).

48. Portable riveters.

(The same applies here).

49. Tree spraying apparatus.

(The use of sprays for preventing destruction of trees by insects is coming into universal use. These sprays are usually operated by gasoline engines. There is no reason why they should not be operated by storage batteries with electric motors. The manufacturers of such apparatus should be interviewed).

50. Cement Blowing apparatus.

(A new system has recently come into vogue, by which cement is sprayed or blown onto the steel work, instead of being put on by hand, as by Masons, etc. The manufacturers of this apparatus should be interviewed, because it is not always convenient to get power to operate the motor for this purpose. The same truck that they haul their merchandise with could be used for doing this.)

✓ 51. Fog horns. - Klaxon.

(This matter is in Mr. Hutchison's hands.

✓ 52. Submarine bell apparatus.

(This matter is in Mr. Hutchison's hands.

53. Electric time systems.

There are a large number of Electric clocks in use in schools and factories throughout the United States. In these systems, a master clock, which is supposed to keep correct time, closes the circuit every minute, sending current through the secondary clocks, which, by means of electric magnets, operate the hands to keep them in step with the master clock's hands. All schools and colleges should be canvassed in this matter, as well as other places where such clocks are used. This includes railway stations, etc. Also the Electric clock manufacturers to be interviewed. There are some electric clocks that use magnets, with no battery. But they are expensive and are not in as much use as the battery operated outfits).

✓ 54. Breeches Bouy life saving apparatus.

(This matter is in Mr. Hutchison's hands.

56. Electric toys of all kinds.

(All manufacturers of toys should be interviewed. They use now, dry batteries. These dry batteries last for a short time, and the operation of the toys is not satisfactory. There is a very large market awaiting the cylindrical cell for this purpose).

FOR LIGHTING

- ✓ 1. Street cars. (Refer to OPERATION OF #22).
- ✓ 2. Interurban cars. (Ditto).
- ✓ 3. Subway cars, emergency lights. (Laws will soon be passed, necessitating the equipment of all subway and elevated trains with emergency lights, operated by storage batteries, so that when the power goes off, the lights will remain in the car. The McAdoo Tunnel system in New York is so equipped. The lead battery is of little service on this, because it deteriorates rapidly. This matter is in Mr. Thompson's hands.
- ✓ 4. Subways. The law will soon compel the illumination of subways by storage battery lights, or a reserve storage battery in the power stations, to take care of the lights in case the power goes off.
- ✓ 5. Railway train lighting. (The difference in weight between the Edison Battery and the lead battery will pay for the Edison Battery in a short time, owing to the high cost of hauling on fast passenger trains. Mr. Thompson has this matter in hand).
- ✓ 6. Railway signal lights. (In Mr. Thompson's Department).
- ✓ 7. Car inspector's Lanterns. (The small cylindrical cell is excellently adapted for this kind of work, and should be pushed for this).
- ✓ 8. Train crew lanterns. (The same applies).
- ✓ 9. Locomotive headlights. (The steam turbines universally used for operating the arc light of the headlight of the locomotive is extremely wasteful of steam, and is very unpopular among engine drivers, because of the difficulty of supplying it with steam. Edison storage battery installed on a locomotive or on the tender could do this very satisfactorily).
- ✓ 10. Electric bouys. (This matter is in Mr. Hutchison's hands.

11. Automobiles, either in battery alone or in conjunction with dynamo.

(There are a large number of lighting outfits being installed on automobiles. The objection that has been raised to the Edison Battery thus far on such lighting outfits is the difference of potential between the charge and discharge voltage. This is of no moment however, because when a car is standing still, it does not need the lights as brilliant as when moving. The battery is simply to take care of the lights when the speed of the engine falls below a certain rate of rotation. Therefore, the argument is groundless, and the Edison Battery should be used in this work. Lead Batteries now being installed will soon commence to play out and the Edison Battery will come in on the renewals. This field should be pushed very hard).

12. Mining lamps.

(All miners use a lamp. The cylindrical cells can be used for this purpose to great advantage. Large mine owners should be communicated with on this subject. In fact, a complete miner's lamp should be gotten up and sold with Edison Battery).

13. Police lamps.

(All policemen on night duty carry an inspection lamp for inspecting locks of doors, etc. These lamps are now operated by dry batteries. Many thousands of the Edison Battery of cylindrical form can be sold for this purpose. A complete lamp with Edison Battery in it should be designed and put on the market for this purpose).

14. Postman's lamps.

(Postmen also use the same kind of lanterns that the policemen use to read the addresses on letters, inspection of the interior of post boxes, etc. When dark, The Post Office Dept. will be taken care of by Mr. Hutchison as soon as these lamps are ready.

15. Night lamps and clocks.

(The American Electrical Novelty Co. and others make a large number of clocks, which, by pressure of a button, can be read. The small cylindrical cell should replace the dry cell for this purpose).

✓ 16. Safety lamps in magazines, submarines, etc.

(In the event of failure of the lights on board ship, the interior of the magazine is illuminated by these small safety lamps, that are already on the market. The Edison Battery should be adapted to such a lamp, and a very large sale would result. Mr. Hutchison has this matter in hand).

18. Shops, Offices, etc., after power is off.

(There are many factories, lighted by their own dynamos, which shut down at 6 o'clock. In the event of the officers of the company desiring to work after dark on the books, etc., they have to use kerosene lamps. A reserve storage battery outfit would be very advantageous in such work).

19. Emergency lights in theatres.

(If proper pressure is brought to bear all theatres can be compelled to put in such a battery for emergency in case the lights go out by reason of disconnection or discontinuation of the current from the main, the theatre can be lighted by the storage battery).

20 Stage ballet and miscellaneous uses.

(There are a number of ballets staged in which small electric lamps are used on the person of each dancer. The cylindrical cell is excellently adapted for this work. When a show is on the road, they cannot always get the small dry batteries for the electric lamps, but can carry the Edison Battery with them and have them charged from time to time, as they may need it).

21. Country houses.

(There are a large number of isolated plants in use today in country houses. The Edison Battery is best adapted for this work. Isolated plant manufacturers should be worked on this).

22. Yachts.

(The same holds good on yachts).

23. Omnibuses.

(There are quite a large number of gasolene and horse driven buses that must be illuminated inside. The storage battery is coming into extensive use for this purpose. The Edison Battery is best adapted for this use. All gasolene car manufacturers should be interviewed in this matter).

✓ 24. Electric lamps used by Submarine divers.

(Submarine diving apparatus manufacturers should be interviewed in this matter).

✓ 25. Reserve for light ships and light houses using electric lamps.

(This matter is in Mr. Hutchison's hands.

26. Hotel & cafe dining tables.

(In many instances the individual lighting of tables in the center of dining rooms is difficult. A small Edison Battery accomplishes this excellently. The Blackstone Hotel in Chicago is so equipped.



MISCELLANEOUS USES.

1. Booster battery on power circuit. (This is the large cell position, and work thereon is rather premature yet as to pushing.)
2. Carrying day or night loads of small plants. (There are large numbers of plants throughout the country which are now running day and night, having either only a day load or a night load. Edison Storage Battery can be used to great advantage in such work).
3. Storing power generated by wind-mills. (There is no reason why power derived from wind-mills should not be used to charge storage batteries for lighting country residences, operation of farm machinery etc.)
4. Storing power generated by tidal motors. (Various schemes are on foot for using the tides to generate power. As the flow of the tide is intermittent, the power must be stored. The Edison Battery is excellently adapted for this purpose).
5. Storage power generated by wave motors. (The same holds good).
6. Storing power generated by solar engines. (Efforts are being made to concentrate the heat from the sun to boil water to operate steam engines to drive dynamos. Owing to the uncertainty of the weather, this power must be stored, and Edison Battery is best adapted to this work).
7. Water wheels. (There are a large number of rivers and streams that cannot be dammed up for ordinary turbine operation, but which are still available for power by the use of large paddle wheels turned by the flow of the water. Power can be stored up in the night-time to augment the dynamo the next day for the operation of electric motors for farm machinery, etc. Sometimes this power is not sufficient for the operation of grinding mills, etc. but if augmented by power stored at night, would operate these mills the next day).

8. Reserve power for heavy demands. (This includes many manufacturing enterprises, railway power houses, etc., and is more comprehensively included under the term "Booster Battery" referred to above).

9. Utilizing and storing power, now going to waste in emptying and filling canal locks.

(When vessels pass through canal locks, the water must be admitted slowly or released slowly, in order that dangerous currents will not be produced, which would tend to cause the vessel to collide with the end of the lock. This power is now going to waste. There is no reason why a reversible turbine system should not be used so that the water passing into or out of the lock can operate the turbine, generate electricity, for storage in Edison Storage Battery. The power derived therefrom could operate the lock mechanism as well as furnishing current for lights etc., etc.).

10. College laboratories and test stations.

(All colleges and laboratories use storage batteries for purposes to which the ordinary line current is not adapted. These batteries receive very little attention, and in the case of lead batteries, deteriorate through lack of attention. The Edison Battery is the best in existence for this kind of work. All colleges and laboratories should be canvassed in this matter).

11. High potential, small unit test batteries.

(In all colleges and laboratories, it is necessary to have access to very high direct current voltages. The lead cells now used for this purpose are very small, but deteriorate very rapidly. They get very little use, but are needed quickly when the urgency arises. The one ampere-hour cell is large enough for such purpose, and thousands of them can be sold to meet this demand).

12. Watt Meter Testing.

(The N.Y. Edison Co's Meter Men use Two Edison 44 Cells for Testing Home Meters. Current about 250 amperes for a few seconds.)

**Edison General File Series**  
**1911. Battery, Storage - Country House Lighting - General (E-11-09)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery. Most of the letters are responses to an advertisement placed by Edison in *Iron Age* and numerous newspapers soliciting investors and promoters for his "Country House Lighting System"—a plan to illuminate rural homes located beyond gas and electric mains. Included is a compilation of estimated costs and service plans, along with correspondence concerning a successful scheme for lighting houses with storage batteries in Norfolk, Virginia. Other items, including a note from Charles Edison, discuss plans to outfit a "Show House" near Edison's home in Llewellyn Park, New Jersey. The selected letters are primarily from prospective investors who had previous connections with Edison. Samples of Edison's standard replies and marginalia have also been included.

Among the correspondents are Robert Colwell, an acquaintance of Edison's former business associate Robert H. Thompson; Charles H. Mixer, who worked with Edison as a telegrapher in Louisville during the 1860s; longtime associate Cornelius E. Nestor, president of the Nestor Electric Vehicle Co.; Alfred J. Voyer, an office boy at 66 Broadway in New York City during the late 1870s; and Will C. Turner, co-founding secretary and manager of the Edison Electric Light Co. of Columbus, Ohio. Also included is a letter by electrical engineer George A. Mullen containing reminiscences about Edison, Frank J. Sprague, and Samuel Insull at the Pearl Street central station.

Less than 10 percent of the documents have been selected. The items not selected consist primarily of letters from prospective investors and duplicate material, including a typed copy of Edison's enumerated "Uses for Edison Battery" from October 1911.

Telephone 1067 Bergen

T. Schulz Bush & Darr Co.  
485-489 Pacific Avenue  
463

Saturday - Nov. 11  
11 o'clock

Jersey City, N. J., Oct 6 1911

Mr. Thos. A. Edison

Orange, N. J.

Dear Sir:

Your favor of 3<sup>rd</sup> inst. to hand and shall  
avoid further communication from  
you regarding the subject in question

Called

Yours truly,  
P. H. Bush

Battery TAG

Wester =

Ans.  
10/2/11  
John

Here is a new scheme that is being worked in Norfolk Virginia - It has proven a big success -

They light country houses shipping the charged sets (2) by freight. They use 8 10 & 16 candle high Economy Incandescence lamps 3/4 watt per candle. As soon as battery shows weakening of light the alarm is put in & the discharge one sent back to Norfolk by freight.

2  
to be recharged =  
They use 10 to 14 v. cells lamps & believe =

HE exacts from the Customer a deposit of the full list price of the battery which is returned ~~when~~ should they give up the use -

HE charges 1.25 per charge & buys the current for 15 cents. The difference is 115 from which he pays freight & deposits. He says its enormously profitable on a 3 yr. life of battery which we guarantee & he has

the use of the deposit  
 as working capital -  
 He says even the farmers  
 are using them  
 they have lights in  
 all the rooms but  
 turn them out of rooms  
 they are not using  
 says ~~there~~ one  
 charge costs with  
 farms a little over  
 a month - of course  
 the large houses use  
 several dollars worth  
 a month - The way  
 he operates is to

go to a small town  
 + puts up posters  
 announcing that  
 on a certain day  
 he will demonstrate  
 Electric house light  
 by the E. Bat at  
 — Hall = admission  
 free also sends circular  
 to best people - says  
 Halls are jammed  
 + he shows the light  
 + tells the cost + gets  
 all the orders he  
 can handle —

5 =

Also lately he has done  
some things on  
tug boats, Bridges, <sup>Quinn's</sup>  
about 2 months  
ago he extended it  
to Accommodate Lighter  
& already has 50 set  
he exacts list price as a  
deposit & ~~charges~~ Exchange  
a discharge <sup>of</sup> ~~the~~ <sup>for</sup> ~~the~~ <sup>for</sup>  
for a charged one  
for 1.15 cost 15 cents -  
He says he is doing a fine  
business on this - I thought  
I would let you know about  
This as probably some scheme might

6

works in California where  
the people are far rich  
than down in old  
Virginia -

~~City Court of New York~~  
~~Justices Chambers City Hall~~  
N.Y. Oct 28. 1911

Mr Thomas A Edison OCT 30 1911

Orange N.J.  
Dear Sir

What can a  
middle aged man do  
with the article advertised  
who has push brains and  
ability without the capital?  
I can refer to Prof. Wm J  
Hammer as a bay hand  
and life long friend.

Yours Respectly  
Theodoris Van Wyck  
135 E 4th St. N.Y.



Monday  
Nov 1.30  
October, 29th, 1911.

Dear Sir:-

Referring to your newspaper advertisement of to-day I beg to say that I feel inclined to share in some legitimate, sound and growing enterprise, and, after thorough examination, to invest the necessary amount.

I am a foreigner, German, Christian, and have a thorough commercial training and wide experience. I must add, however, that - inasmuch as I have lived in this country for only four years - I do speak English pretty well and am able to read even difficult correspondence, technical treatises, etc., while I do not control the language to such an extent as to be competent to do outside work, etc.

I am interested in a very important enterprise which, however, leaves my time perfectly free, and I am anxious to make use of this time. I am in possession of first class bank and private references and shall be glad to submit same.

In case you should be interested in my offer, I would ask you to give me as detailed an account as possible of the most important points of your proposition which I shall, of course, treat as strictly confidential. So long as I am unable to judge whether the nature of your project will be acceptable to me, I do not wish to occupy either my time or yours; on the other hand, if your information should satisfy me, I shall gladly arrange for a further oral interview.

Kindly send your first letter to the address indicated below. Looking forward with interest to your reply, I am,

Yours truly

Mr. H. H.  
Box 57, Poststation W,  
West 33rd Street,  
New York.

H. W.

AGENTS FOR  
BERGER'S METAL LUMBER

CONCRETE AND TERRA COTTA  
TILE CONSTRUCTION

## LINCOLN MONOLITHIC COMPANY

CONTRACTORS AND BUILDERS

367 FULTON STREET

PHONE 6667-MAIN

BROOKLYN, N. Y. Oct. 29<sup>th</sup> 1911

Monday, Nov 6  
3.30

Thomas A. Edison  
Dear Sir

I have been in the Real Estate & Building <sup>or</sup> <sup>30</sup> Business for  
20 years. - am a thorough Business man & Salesman.  
am 45 years old, have some money and am well  
connected, can furnish Best of References.

I know all about Concrete and Building Construction  
possess Executive ability and am a Hustler

Kindly let me have particulars of your  
proposition & reply. Yours &c

Louis J. Levy



E. D. KAHN  
225 FIFTH AVENUE  
BRADWICK BUILDING  
NEW YORK

Oct 30/11

Wednesday  
Nov 15  
11.30

Thos W Edison Esq  
Dear Sir

In reply to your adv August 1st I should  
like to say I am an experienced business man, having  
conducted a store in a fairly large way many years, and  
would like to get into some business in which my capital  
would be safeguarded as you state and would be pleased to  
have you inform me as to further particulars

Yours  
J. L. Compas  
of above

18.0.17

Wednesday - Nov 15  
1.30

Oct. 30th, 1911.

Thomas A. Edison,  
Edison Laboratory  
Orange N. J.

Dear Sir:- My attention has been called to your "Ad" in yesterday's paper, and will say that I am interested therein.

I fail to clearly understand what you may wish me to state in the way of qualifications, but believe I can easily assure you as to reliability and financial responsibility at the proper time and place. Will say further that I am at present the owner of two mechanical business lines connected with both the railroad and automobile industries which are not only successful, but well known throughout the country and I dont think you would find my bank standing in the least unsatisfactory. At the present time I have some little capital that is idle and the name of Edison naturally is of interest to would be investors as the usual questions of reliability and good faith should be entirely eliminated thereby.

If an interview is neccessary to get in touch with you, will try to arrange same to suit your convenience but having just returned from a business trip abroad am unusually busy and would greatly appreciate further detal from you regarding your proposition. In closing will say that I am not only fully prepared but very willing to show my good faith in what you have to offer if I can see plausible signs of results.

Yours Very Truly,  
*E. C. Miller*  
#117 West 64th, St.  
New York City.

Monday  
Nov 6  
7.30

New York Oct. 30<sup>th</sup> 1910

961 30 211

Mr. Thomas A. Edison

Dear Sir Orange K. J.

In answer to the advertisement in the "American" of yesterday -

Am over fifty years of age, and have been in active business in this city for over thirty years,

Yours very respectfully  
Shea Franklin

252 W. 85<sup>th</sup> St.  
New York City

TELEPHONE—LONG DISTANCE  
5325 CORTLANDT

ESTABLISHED JUNE 26, 1899  
REPUTABLE INVESTMENTS  
**BONDS AND STOCKS**

REGISTERED CABLE ADDRESS  
WILLGETTEE NEWYORK

IMPORTANT COMMITMENTS  
EXECUTED SUCCESSFULLY

**WILL C. TURNER**  
THIRTY-ONE NASSAU STREET  
NEW YORK, N. Y., U. S. A.

CORRESPONDENCE INVITED  
REGARDING INVESTMENTS

*B.A. 11/2*

Oct. 31st, 1911.

Mr. Thomas A. Edison, Edison Laboratory,  
Orange, N. J.

Dear Sir:-

Your advertisement in the "New York Herald" of Sunday interests me. Will you kindly let me know particulars? My record is enclosed herewith.

Sincerely and very truly,

*Will C. Turner*

Dictated by Mr. Turner  
to E. L. B.

[ATTACHMENT/ENCLOSURE]

## A PERSONAL MATTER

For those who have not done business with me and do not know me I submit herewith

### MY RECORD

Was born in Easton, Genesee Co., Mich., June 24, 1884.  
Was graduated from Ann Arbor, Mich., High School, classical course, 1897.  
Was graduated from University of Michigan as Bachelor of Arts, class of 1901.  
Was newspaper man from 1901 to 1909 in Philadelphia, New Orleans, Saginaw (Mich.), Detroit and Lansing, Mich.  
Was Clerk, House Committee on State Affairs of Michigan Legislative from 1909 to 1910.  
Was chief publisher and proprietor of "City and Country" (Columbus, O.), 1901 to 1909.  
Was member Governor's Classification necessary member State of Ohio and took part in suppression of Cincinnati riots of 1904.  
Was Secretary and Manager Columbus (O.) Edison Electric Light Co. 1897 to 1900—Was one of the organizers of the company.  
Came to New York City in 1900 and June 26th of that year began the business of an investment banker—securing money for customers in bonds and stocks (which, after thorough investigation, I could recommend), also selling for customers unsatisfactory securities and improving the proceeds in better securities. I have been engaged in this business continuously since that time, and have customers in every State in the Union and in nearly every Foreign Country.

### MEMBER OF

Absent Assn. of Univ. of Mich. (Ann Arbor).  
American Academy (East Avenue).  
Michigan Society of New York.  
National Geographic Society (Washington).  
New York Press Club,  
North 10th St.,  
University of Michigan Club of New York.

### AS TO MY PERSONAL INTEGRITY:

(References without permission).  
Wm. H. Bryan, formerly National Bank Examiner,  
7 Pine Street,  
Huron S. Guild, Secretary Corporation Trust Co., 37 Wall Street,  
E. F. Grant, Treasurer Consolidated Stock Exchange,  
35 Beaver Street,  
John A. Hennessey, Editor "N. Y. Press" and former President New York Press Club, 79 Pine Street,  
Ernest MacMillan, Banker, 6 Wall Street,  
Henry Harwood, Attorney-at-Law, 110 Nassau Street,  
D. A. Reynolds, President Great Eastern Telephone Co., 37 Liberty Street,  
Henry C. Dickols, Real Estate, 206 Riverside Drive,  
Walter C. Dickols & Co., Members N. Y. Stock Exchange, 66 Broadway,  
Chester D. & Val, Certified Public Accountants, 55 Liberty Street,  
Chas. H. Van Huren, Member Consolidated Stock Exchange, 6 Wall Street,  
Gen. I. Wilson & Son, Printers, 82 Beckman Street.

As the Commercial Agencies are used almost exclusively by those who desire credit, and as I have no occasion to ask for credit, I do not refer to them. I have been in business long enough, however, for these agencies to know something about me and my methods. They know absolutely nothing about my financial standing and naturally have no means of knowing, because I buy and sell solely for cash.

### AS TO MY FINANCIAL STRENGTH:

Any cash entrusted to me in the execution of any order will be used exclusively for that purpose, and the order will never be executed until the cash is returned. My customers in all parts of the country are my best references. There may be a customer of mine in your vicinity, I have been doing customer orders since I have been in New York City for more than twenty-two years, and in all that time no more than twenty-two years, and in all that time no customer has found fault with my methods. That ought to be a reference of some considerable value.

*W.C.T.*

## Edison Is Deluged With Answers to Business Chance Ad

Special Dispatch to The Iner Ocean.  
NEW YORK, Oct. 21.—Thomas A. Edison inserted the other day in the newspapers an advertisement saying that he had a new article to put on the market, with which a limited number of middle-aged men possessing some business sagacity and a capital of \$2,000 to \$7,000 might start in business for themselves without endangering their capital. And ever since then Edison's offices at West Orange, N. J., have been bombarded with sheets of letters.

Considerable mystery surrounds the nature of the article to which Edison alluded in his advertisement. Not even all of his assistants at the plant in West Orange are sure what it is. All they do know is that it is the fruit of a brand-new idea.

In the meantime Edison will not discuss the nature of the latest invention. He prefers to keep silent until he has decided upon who will be picked to handle it. Two of his secretaries are wading through the mail bags full of applications and sorting out such as seem worthy of the inventor's own attention. To such of these as seem best qualified for the work he has in mind he will write, arranging appointments.



RAILWAY EQUIPMENT.  
CAR TRUSTS.

E. O. 11/11

ROBERT COLWELL,

30 BROAD ST.

ESTABLISHED 1876.

TELEPHONE 8288 BOSTON.

NEW YORK, Oct 31/11 100

Mr. Thomas A. Edison  
Edison Laboratory  
Orange N.J.

Dear Sir Referring to your advertisement  
in last Monday's New York Sun. I am gratified  
to the conditions set forth therein and would  
be glad to learn from you any further particulars  
you may be pleased to furnish me relative  
to the matter in question.

For your information I may add for  
many years I was well acquainted with the  
late Robert H. Thompson with whom I am  
aware you had both business and social  
relations. I am also well acquainted with Mr  
Henry D. Norris who was associated with Mr  
Thompson in business and to whom I at present  
refer as to my self. Soliciting a response  
at your convenience I remain,

Very truly  
Robert Colwell

ESTABLISHED 1854

L. D. PHONE 417-W



E. C. 1/6

NOV. 1911

Mr. A. Edison  
Orange N. J.

Ref: Kindly  
give me full details as  
to article Est. for per  
attached "ad" from Glutz  
for reg

W. Fritzman  
601 Warren St.  
Hudson  
N.Y.

[ATTACHMENT/ENCLOSURE]

CAPITAL WANTED FOR AN  
EDISON INVENTION.

I have an ARTICLE WITH  
WHICH A LIMITED NUMBER  
OF MIDDLE-AGED MEN with  
some BUSINESS EXPERIENCE  
and a CAPITAL of \$5,000 to  
\$7,000 can start in BUSINESS  
for THEMSELVES WITHOUT  
ENDANGERING THEIR CAP-  
ITAL. ADDRESS WITH QUAL-  
IFICATIONS to THOMAS A.  
EDISON, EDISON LABORA-  
TORY, ORANGE, N. J.

s  
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AN ADVER

**FRANK H. COYNE**  
80 STATE STREET  
BOSTON, MASS.  
Telephone 2787 Fort Hill

*E. C. W. K.*

November 1, 1911.

Mr. Thomas A. Edison,  
Edison Laboratory,  
Orange, N. J.

Dear Sir:-

Your advertisement in the Sunday paper, stating that you had an article which a limited number of middle aged men with some business experience and a capital of five to seven thousand dollars, etc., has been brought to my attention, and in reply I beg to state that I graduated as a mechanical engineer at Stevens Institute in 1894 and have since engaged in the manufacture of paper and also in operating several mines throughout the United States and Mexico.

I have also operated lighting properties and have had considerable selling experience; namely, with the Fraser & Chalmers Co., now the Allis-Chalmers Corp'n, and have but recently taken the exclusive agency in the states of Massachusetts and Rhode Island for the Detroit Combination Tool, manufactured by the Detroit Tool Co. These states I have organized with sub-agents throughout and have both time and capital that I can put into a business that I can add to my present one.

The last salaried position I had was with the Hollingsworth & Vose Co., manufacturers of rope manilla paper in this city, and they paid me \$6,000 a year.

I would be very pleased to hear from you with particulars of your proposition and once knowing what it is I can judge whether I am suited by experience to handle it to advantage and can outline to you more fully my qualifications.

Trusting to be favored with a reply, I am

Yours very truly,

*Frank H. Coyne*

FHC/M

*Age 38.*

E. R. 1/6



POCKET,  
BARBER  
AND  
DRESSING  
COMBS  
MENTHOL  
INHALERS, Etc.

JULIUS NASSAUER  
Manager New York Office  
475 Broadway  
PHONE 498 Spring

New York, N. Y.

Nov 1 1911

Mr Thomas A. Edison  
Orange N. J.

Dear Sir,

Responding to Globe advertisement,  
I beg to ask for details of respective  
business opportunity.

Having, for a number of years, represented  
several Western specialty factories in this  
city, I have thorough business experience  
and a widely and extended acquaintance  
with Jobbing Department and Export  
trade.

Unexceptionable references at your request,  
or Broadstreet agency report for preliminary  
purposes. Awaiting your valued reply,

I remain, Yours Very Respectfully  
Julius Nassauer

**ALFRED J. VOYER**

STOCKS, BONDS, LOCAL SECURITIES

WATER TOWER BUILDING 222

ALBANY, N. Y. 50 & 61 STATE STREET

CORRESPONDENT OF  
FREDERICKS & SIMMONS  
MEMBER CONSOLIDATED STOCK EXCHANGE OF N. Y.  
38 & 38 BROADWAY STREET  
NEW YORK

*Read about  
put him on list  
write very quick  
number of 110  
2000 of 108-*

Mr. Thomas A. Edison,

West Orange N. J.

My dear Mr. Edison: You will recall in the winter the "office boy", on the top floor of #66 Broadway, in the early '70s, during the development of the Automatic system of telegraphy. The "office boy" is now 52 years of age, hale, hearty and vigorous.

I renewed my acquaintance with you on the porch of the United States Hotel, during the summer of 1888.

I have read with some interest, the attached article. If it is not an exaggeration, I would like to avail myself of its privileges.

I have been engaged in the Stock brokerage business for the past 18 years, and would welcome any change

I trust you will recall me as readily as "Jack" Wright, E.H. Johnson, and even Mr. J.C. Reiff, just previous to his death,

**ALFRED J. VOYER**

STOCKS, BONDS, LOCAL SECURITIES

BOOTH TELEPHONE 405

ALBANY, N. Y. 30 & 41 STATE STREET

CORRESPONDENT OF  
FREDERICK SIMMONDS  
MEMBER CONSOLIDATED STOCK EXCHANGE OF N. Y.  
26 & 28 BEAVER STREET  
NEW YORK.

(2)

Perhaps you will also recall our great effort to beat the W.U. on the President's message, with the iodine of potassium paper, ( purchased by me for you so often, by the pound).

During the past thirty five years, I have been actively connected with the telegraph, telephone, and electric railway business.

If the proposition involves a knowledge of electricity, I would feel especially qualified.

Trusting to hear from you, I am,

Yours truly,

*Alfred J. Voyer*

Albany N.Y. Nov. 2nd. 1911.

Windsorcraft = Gay  
I think you are entirely mistaken about  
the lightning of Country #28 Maple Heights,  
your part of your Madison, N. J. There are  
hundreds of them <sup>Thomas A. Edison</sup> <sup>November 2nd 1911</sup> <sup>Orange, N. J.</sup> <sup>more than</sup>  
you believe some argue

Dear Sir;-  
Referring to my recent talk with you in regard to the "Lighting of Private Houses beyond Gas and Electric Mains with The Edison Storage Battery".

I have satisfied myself that the Independent Electric Light Co's. cover the field within a radius of ten miles of Madison, N. J. and that there are not a possible 100 customers.

They differ from the Municipal Plants in that they will supply electricity outside Village Limits.

So it appears impossible for me to follow this line and live in Madison, should anything develop in New York City I would like the opportunity to look into it.

In any case my trip to Orange was no loss as it was a great pleasure to meet you.

Very truly,  
S. F. Palmer



[ATTACHMENT/ENCLOSURE]

LIGHTING PRIVATE HOUSES  
BEYOND THE GAS & ELECTRIC MAINS

MEDIUM HOUSE

Cost to consumer -- 6 A-4 Cells --  
Deposit required to be returned when  
service is given up ----- \$81.00

RENT & SUPPLIES

Rent \$5.00 per year per cell ----- 30.00  
Charging 2-1/2 times per month 75¢ per charge ----- 22.50  
Carting 2-1/2 times, 50¢ each time ----- 15.00  
Lamp breakage 400 hour life ----- 6.00  
Annual cost ----- \$73.50

One 5 CP in Kitchen 1 hour  
One 10 CP Dining 1 "  
Two 10 CP Sitting room 3 1/2 "  
Four 3 CP Bedrooms 1 "

LARGER HOUSE

6 A-8 cells --  
Deposit ----- \$150.00

COSTS

Rent \$10.00 per cell ----- \$60.00  
Charging 2-1/2 times \$1.50 per charge ----- 45.00  
Carting 2-1/2 times ----- 15.00  
Lamp Breakage ----- 12.00  
\$132.00

One 5 CP in Kitchen 1 Hour  
Two 10 CP " Dining 1 "  
Five 10 CP " Sitting room 3 1/2 "  
Four 3 CP " Bedrooms 1 "

[ATTACHMENT/ENCLOSURE]

CHARGING

6 A-4 --V.

Charging Voltage 11 Volts, 30 amp. 7 1/2 hours input 2 1/2 KWH. at 4¢ KWH. 10¢, 2 1/2 charges sold at 75¢ per charge is \$1.87 per month, deducting cost of current leaves gross profit of \$1.62 per month, allowing 40% on the gross profit for general expense, rent, attendance, and repairs gives net profit of 97 cents per battery per month.

200 Customer 2 1/2 deliveries per month gives 19 deliveries per day  
To charge these requires about 50 KWH daily  
If charged daily for 7 1/2 hours requires engine and dynamo of about 10 Horse power.

Current could be made with oil, gas or gasoline Engine cheaper than 4 cents per KWH.

The profit to the renter on above 200 customers would be \$194.00 per month.

If only suburban work is done then a one horse delivery wagon could make deliveries.

The average cost of this class of work as taken from the books of a dozen concerns is \$100.00 per month; if 19 deliveries daily could be made the receipts would be at 50¢ per delivery & picking up \$9.50; if only 10 per day, receipts would be \$5.00, both of which would give a profit.

Call Address "Edison's New York"

From the Laboratory  
of  
Thomas A. Edison,

Orange, N.J. November 6th, 1911.

Form A

Mr. Julius Nassauer,  
475 Broadway,  
New York City.

Dear Sir:

Your reply to my advertisement has been received and its contents noted. I am preparing a statement of the proposition under consideration, and in a few days shall take pleasure in sending same to you, at which time we can arrange for a personal interview if deemed desirable.

Yours truly,

JULIUS NASSAUER,  
475 BROADWAY, N. Y.  
PHONE 4060 SPRING

*Thomas A. Edison*

*Nov 22/11*

*Dear Sir*

*Referring to your above favor,  
I beg to state my regret, that  
no further details have as far  
reached us. Very truly  
Yours  
J. Nassauer*

PHONE 4827 MARKET

CAPITAL, \$100,000.00

New Jersey Live Stock Insurance Company

INCORPORATED

189-191 MARKET STREET

OFFICE OF THE VICE-PRESIDENT

NEWARK, N. J.

11/7/11

Mr. Thomas A. Edison

Wendocraft

Orange, N. J.

Dear Mr. Edison

Herewith enclosed please find two enclosures - Keys for Edison Battery & Lighting private home - I return them because since my talk with you find that there is no money in it for me under present arrangements but all for Mr Edison. Thanking you for the interview I am

Very truly yours

C. W. Lehnberg

You are very much mistaken that there is no money in the business - you should come again & get better informed. The lighting of large country estates where you can sell Engine diagrams & batteries is a large business of itself.

Nov. 7th, 1911

Mr. Howard D. Allen,  
c/o Albert Pool Co.,  
221 North 23rd St.,  
Philadelphia, Pa.

Dear Sir:-

Your favor of the 1st instant was received. In reply I would say that the proposition under consideration involves the exploitation of my storage battery for certain special uses by high class men who would give their time to the matter exclusively, working with their own capital and getting around their territory in person. Hence, you will see it could not be handled with other things by a concern such as you own.

Yours truly,

PHONE HAMILTON 1438

R. J. FISH  
GENERAL SALES AGENT  
68 HILLY STREET


BROOKLYN, N. Y. 11/10/11

Mr. Thomas A. Edison,  
The Edison Laboratories,  
Orange, N. J.

Dear Sir:--

I am in receipt of your favor  
of the 9th instant, and as requested, will  
call upon you about eleven thirty a.m. on  
Monday the 13th.

Very truly yours,



RJF/P

Telegram

Nov. 10, 1911

R. F. Haffenreffer, Jr  
Hotel Belmont,

42<sup>d</sup> Street + 4<sup>th</sup> Ave  
New York

Can see you at ~~ten~~ ten  
o'clock tomorrow morning

J. A. Edison

Sent Nov 10/11

WMM

Change  
Stamps  
Bakery Co

# NIGHT LETTER

## THE WESTERN UNION TELEGRAPH COMPANY

25,000 OFFICES IN AMERICA INCORPORATED CABLE SERVICE TO ALL THE WORLD

This Company TRANSMITS and DELIVERS messages only on conditions hereinafter specified, which have been accepted by the holder of the foregoing Night Letter. Service and its standard rates, only by depositing a payment thereon in the amount specified, and the Company will not hold itself liable for errors or delays in transmission or delivery of telegraphed messages, with all possible care. Payment must always be made before the message is put for transmission, and in any case beyond the date of filing orders, in which, unless otherwise stated below, this amount has been indicated by the sender thereof, but in any case within the limit, if so provided in writing within forty days after the date of filing the order, to the Company for transmission.

THIS IS AN UNREPLICATED NIGHT LETTER, and is delivered by request of the holder, under the conditions named above.

ROBERT C. CLOWRY, PRESIDENT

BELVIDERE BROOKS, GENERAL MANAGER

RECEIVED AT

November 11 -11

8 NY DS 25 Paid night letter  
 HI New York N.Y. Nov 10-11  
 Thomas A Edison

Orange New Jersey.

Will leave New York ten minutes past nine Saturday morning arriving  
 Orange nine fifty nine therefore will probably arrive at your Laboratory  
 shortly after ten o'clock.

R F Haffenreffer. 1:31am



WE HAVE NO CONNECTION WITH ANY LIGHTNING ROD CONCERN WHATSOEVER

We Light Farms and Country Properties with Edison's Latest Invention: THE NEW EDISON STORAGE BATTERY. We Protect Them From Lightning by a Scientific System of Conductors.

**GEORGE ALLEN MULLEN & CO.**  
ELECTRICAL ENGINEERS

(ESTABLISHED 1866, AT 126 BROADWAY, NEW YORK)

OUR SPECIALTIES: LIGHT AND LIGHTNING

This is the only System of Lightning Protection which is recognized by the Insurance Companies. Over 2500 Mutual and Old Line Companies grant a reduction of 20 per cent. where our system is used.

BOTH PHONES: (WELL BLD. SEVENTH, 2122.)

Swedesboro, N. J., Nov. 13, 1911

Mr. Thomas A. Edison,  
Orange, N. J.

My dear Mr. Edison:-

Referring to our conversation of 31st ult.

**RENTAL PROPOSITION:**

This amazing proposal struck me so forcibly that we have rented a small factory, ideally located at Woodbury, N. J., and will soon be ready to try out your proposition. To me the possibilities are simply boundless. We are well equipped to handle it in connection with the LOW VOLTAGE EDISON STORAGE BATTERY PLANTS, which we have been working on for some little time and have extensively advertised. We have set up one of these isolated plants which we will have on exhibit for our numerous prospective customers to see, just as soon as I can get to Orange and secure the batteries which may be tomorrow or Wednesday, when I hope to have an opportunity to see you.

**NEW JERSEY STATE BOARD OF AGRICULTURE:**

This meets in Swedesboro, N. J., 15th and 16th of this month. You will perhaps recall that I mentioned to you the fact that lightning rod men were using your name to swindle the farmers. For instance: John Stutt of Bridgeton, N. J., is showing a letter from you which he claims is your endorsement of the old twisted lightning rod. Another, one George Pittard of

*Wendover*  
*Was he on our list of the Ad-dot cant place*  
NOV 23 9114

#2 WE HAVE NO CONNECTION WITH ANY LIGHTNING ROD CONCERN WHATSOEVER '13

**GEORGE ALLEN MULLEN & CO.**  
ELECTRICAL ENGINEERS

(ESTABLISHED 1882, AT 124 BROADWAY, NEW YORK)

OUR SPECIALTIES: LIGHT AND LIGHTNING

We Light Farms and Country Properties with Edison's Latest Invention: THE NEW EDISON STORAGE BATTERY. We Protect Them From Lightning by a Scientific System of Conductions.

This is the only System of Lightning Protection which is recognized by the Insurance Companies. Over 2000 Rural and Old Line Companies grant a reduction of 20 per cent. where our system is used.

BOTH PHONES: (WALL, N.Y. 10001)  
(CENTRAL, N.Y. 10001)

- 2 -

.....1911

Lewes, Del., claims he went to Edison's school for four years to be taught your system of lightning rods. When they invited me to give them a talk on Lightning Protection I suggested they communicate with you during the convention, and that you would doubtless reply giving them the desired information. Since seeing you I have informed them that you would, and would make your position regarding the matter perfectly plain to them. I have thought this would be an excellent time to announce your rental proposition.

**REMINISCENT:**

Last Sunday I was looking over your biography and ran across "His Good Guesses" and "Fun Loving" and I wondered if you recalled the following: Mr. X.Y.Z. \_\_\_\_\_ so called because he thought the slightest duty must be figured out and proven by calculus before being attempted, was an electrician in historic old Pearl St. The safety-catches in the street boxes were in the meantime getting loose in spite of calculus. The first feeder to go threw its load on the next, and it having as much as it could carry also went. There were six winks and the district was in darkness. The only serious interruption, I believe, except during the first fire. You came down with Messrs. Johnston, Bergmann and Sprague. You looked over the map of the district, gave Sprague some figuring to do, but was not satisfied with his results. Sprague went over his figures but insisted he was right. You again questioned their correctness, when Chinook started in to do some "guessing" and he "guessed" that when

WE HAVE NO CONNECTION WITH ANY LIGHTNING ROD CONCERN WHATSOEVER

**GEORGE ALLEN MULLEN & CO.**  
ELECTRICAL ENGINEERS

OUR SPECIALTIES: LIGHT AND LIGHTNING

(ESTABLISHED 1868, AT 126 BROADWAY, NEW YORK)

We Light Farms and Country Properties with Edison's Latest Invention: THE NEW EDISON STORAGE BATTERY. We Protect It From Lightning by a Scientific System of Conductors.

This is the only System of Lightning Protection which is recognized by the Insurance Companies. Over 9000 Mutual and Old Line Companies grant a reduction of 20 per cent. where our system is used.

- 3 -

1911

it came to mathematics Sprague knew as much as Edison, so he (Chinnoek) bet you dinners for the crowd that Sprague was correct. For the moment you seemed satisfied with Sprague's figures much to Chinnoek's elation, but to his consternation two minutes after you again challenged Sprague's figures and Sprague gave in your "guess" was right and Chinnoek bought the dinners. Again one night, it was nearer morning, you came down with Mr. Insull. You went in the test room, Mr. Insull found a soft board on the top of the lamp bin in the regulator room, and spreading out some newspapers he was soon sleeping soundly. You will recall that in this regulator room there were two doors, one led to the office and street, the other to a lavatory, which was placed in a right angle of the smoke-stack. The door which led to the office and street was made of tongued and grooved material, same as the partition, and to a stranger this door would be invisible. When you came into regulator room - about 2 or 3 o'clock - you awoke Mr. Insull and he, rubbing his eyes, groped after you. Suddenly you opened the lavatory door but quickly went out the invisible one. Mr. Insull fell over the hopper and jammed his silk hat against the smoke-stack. His remarks were not heard by you for by this time you were on the street.

Yours very truly,

*George Allen Mullen*

add as follows

If in the meantime you happen to be in New York and come to run out ~~to~~ here, I shall be glad to see you any day between 9 and 3 o'clock except Saturday.

Form A

Boston Mass

Nov. 14<sup>th</sup> 1911-

Thomas A Edison Esq.  
Edison Laboratory - Orange N. J.

Dear Sir:-

Your letter of Nov. 1<sup>st</sup> answering mine in reference to your "ad" in N.Y. Sun was duly received - I answered same acknowledging receipt and stating that I should be pleased to receive your proposition when ready - you answered this letter on Nov 6<sup>th</sup> with a letter of the same text as of Nov. 1<sup>st</sup>.

Not hearing from you since - I thought it best - to write you - not being sure whether I had been overlooked - or that you had not as yet completed your proposition -

As I am liable to be in New York in a few days, I thought - provided you were ready - it would be a good opportunity to see you -

Yours truly -

#11 Boylston Place Irving F. Greene  
Boston Mass -

Nov. 17th, 1911

Mr. Orlando Thayer,  
42 Broadway,  
New York City.

Dear Sir:-

Your favor of the 14th inst. has been received, and I am much pleased to learn that you have already interested a gentleman in the Country House Lighting System.

I would say in reply to your inquiry that the same electric plant can be used for heating small electric stoves, flatirons, coffee percolators, electric toasters, and all similar heating appliances. In fact, it can be used for all purposes for which electric current, obtained from the city wires, is used in the various appliances that are now being made for operation on electric currents.

I am arranging various sizes of complete plants for the electric lighting of country houses. If the purchaser also wants to use the current for the above named purposes in addition to lighting, the next size of plant would answer his requirements. If he also desired to charge his electric automobile from the same source, it might be necessary to have a still larger plant. Of course, it would all depend on the size of the original plant installed.

O.T.

(2)

Nov. 17/11

Modern electric vehicles, with Edison Storage Battery, are capable of making between 100 and 200 miles on a charge. This matter of mileage, however, is one that should be thoroughly understood in purchasing a vehicle, for the reason that one person may get a larger mileage than another person because of more expert handling of the machine.

I have been so extremely busy of late that the preparation of printed matter has been somewhat delayed. It has been done under my own close, personal supervision, and the first booklet on this subject is now ready for the printer. I hope it will be out next week. I shall send you a copy of it as soon as it is ready. Then you will be possessed of further information, and you can come out to see me at any time if there are any other inquiries you want to make to enable you to close the deal you have on hand.

Yours very truly,

ALPHA DELTA PHI CLUB  
136 WEST 44<sup>TH</sup> STREET  
NEW YORK

Nov 21, 1911

NOV 22 1911

Dear Edison,

We will call on  
you tomorrow about one o'clock.

Charles H. Miller

RAILWAY EQUIPMENT.  
CAR TRUSTS.

ROBERT COLWELL.  
30 HERRIN ST.  
—  
ESTABLISHED 1875.  
—  
TELEPHONE 5155 BOSTON.

NEW YORK, Nov 21/11 100

Mr. Wm. H. Meadowcroft  
Edison Laboratory  
Orange N.J.

Sir,

Circumstances prevented my  
going to Orange to day to meet Mr. Edison  
but I will soon take occasion to ask  
for another appointment

Very truly, Yours,  
Robert Colwell



Richmond, Va  
Nov 26, 1911.

Mr Thomas A. Edison,  
Dear Sir:

Relative to our recent correspondence - Cannot you now give me some idea of the proposition you have to offer, so I may know whether or not it appeals to what I should like to do?

As I wrote you in my letter of Oct 31, I am<sup>at</sup> present out of business, but wish to get into active employment as soon as I can; and if you have nothing to offer or your proposition happens not to appeal to me, why then I have some other

which I wish to consider.

I have lately been reading an interesting account of your plan for the use of the moving picture machine in the education of children - If as a final test by which to judge any plan of culture should come the question, Does it create a pleasurable excitement in the pupils? are the pupils pleased and happy while learning their lesson? Then in the vernacular of the street, your moving pictures ought to give the bee.

Yours Truly,  
Ernest Dickinson

Nov. 27/11

Mr. Emmet Dickinson,  
Richmond, Va.

Dear Sir:-

Your favor of the 26th inst. has been received, and in reply I beg to say that my time has been so greatly occupied with a vast number of matters that the preparation of the statement of my proposition has been delayed more than was expected. The matter is now in the printer's hands, however, and a copy will be mailed to you within a few days.

The proposition covers a plan of electric lighting for country estates by separate plants, which include the use of my storage battery. The field is a very large one and the business is attractive, requiring no technical knowledge on the part of the Agent, and there is no undue risk of capital. This is only one of the several things I am bringing out.

In regard to the educational motion pictures, I am now preparing to put the plan into practice. There is much preliminary work to be done, but undoubtedly much progress will be made this winter towards putting things into practical shape. I have not the slightest <sup>doubt</sup> that that it will be so effectual that it will be difficult to keep the children away from school.

Yours very truly,

No Telephone -

Hutch

November 29, 1911.

Mr. Edison,-

In order that the plumbing may be kept from freezing, and the house fairly comfortable for Corbett and McGinnis to work in, it will be necessary to order some coal sent up. If you will O. K. this, I will have it done.

We also ought to have a party line telephone in that house. Would save a great deal of time. This will cost only \$2.50 per month.

I will need a man to go up there and clean the place up in good shape. It is rather dirty, especially in the cellar. The man whom I had taking care of my place last Summer is an excellent fellow, and is now working in the Carpenter Shop of the Storage Battery Factory. I paid him \$15.00 a week. If you will O. K. as you did in conversation on the train, I will take this man away from the Battery Works, and send him up to the house.

I can't do very much in the way of cleaning up, etc., until the caretaker now in possession moves out on December first. But I want to get ready to go ahead at once.

HUTCH



347114, STANCO - House  
Lighting

Hutchison

This is like the Arkansas traveler  
whose dust was blowing when it  
did not rain and a cloud of shingles of  
Mr. Edison, whose it also was

What I want is the Circuit  
All prepared already to go into hands  
of parents, but that is not the  
business, nor is it a few more  
changes necessary in  
the House, it can go  
to the committee

About that house lighting of Edison

Until we have made some experiments in the  
house we have rented in the Park, I do not think it  
would be wise to undertake to write an authentic cat-  
alogue on the subject. The matter of regulation of  
voltage has got to be worked out satisfactorily be-  
fore we dare to undertake this matter seriously. I  
cannot make much headway until the wiring is in-  
stalled and some tests put through.

Therefore, as time is money, why not jump  
right into this automobile lighting proposition? The  
market is there waiting for us, and there is nothing  
indefinite about it. I would like very much indeed  
to do this, because I want to see the sales on bat-  
teries run up now, during the dull season. When de-  
liveries commence to be taken on automobiles for 1912,  
we are going to sell about all we can handle for  
two or three months. In the intervening month or  
two, we want to do some business, and build up that  
end of the proposition.

I am pushing the house matter as rapidly  
as possible, but cannot make much headway until we  
get possession on December first. Meanwhile, please  
let me get busy on the automobile end.

HUTCHISON

H.



I think we should  
have a body of it  
was done with the  
we can connect  
it

12 Francis Ave.,  
Greenwood Mass.  
Dec. 1, 1911.

Mr. Thomas A. Edison  
Orange, N. J.

Dear Sir:-

Under date of Nov. 1, you wrote me  
briefly in reply to a letter of mine referring  
to an advertisement which you caused to  
be published in a Boston paper.

As no further details have come to  
hand - this being the purport of your letter -  
I beg to enquire if the matter referred to  
is still in preparation.

I have several other matters pending  
but should very much appreciate your  
final word in this particular before  
rendering a definite decision on other  
lines.

Very truly yours,  
Clement D. Briggs.

December 2, 1911.

Mr. Miller,-

I am enclosing herewith, memorandum which I sent Mr. Edison, asking that he O. K. the various paragraphs. As he did not O. K. No. 2, I suppose he means that the rest of them are O. K.

Please have sent up to the house, about three tons of furnace coal, and one ton of range coal. I suppose you know where the house is. I do not know the number of the street, but the copy of the lease which Mr. Edison signed, and which you, no doubt, have, will tell it.

I have already received the cigars for Tuesday, December fifth.

M. R. HUTCHISON.

Call Address "Edison, New York."

House Lighting

From the Laboratory Form Letter  
of  
Thomas A. Edison, to go

Orange, N.J. with  
Dec. 8/11 #1 Booklet  
on House  
Lighting

Dear Sir:-

Referring to the recent advertisement for men with a small capital, etc., I wish to say that I have had such an unexpected number of answers thereto that I have been puzzled as to what to do. It was my original intention to have each of the writers come over to the Laboratory to see me, but owing to the number of replies coming from all parts of the country, this would be impossible.

One of my reasons for inserting the advertisement was to get in touch with a class of men with small capital, to whom I could offer opportunities for merchandising various articles which are constantly being brought out in our Laboratory and Works.

At the present moment I have ready one article which opens a wide field. During the winter I expect to have another article, and in the summer two more. All of these devices are of utility and merit and as fast as they are perfected and ready to introduce, I shall take occasion of mailing you all the printed matter which we may bring out in relation to same. This will permit you to judge whether or not it is a



(2)

desirable project for you to engage in.

The business I refer to which is now ready is the Electric Lighting of Country Estates lying beyond the lines of the Lighting Companies in towns and cities.

This unoccupied territory is very great and the present systems of kerosene, gasoline or acetylene are undesirable.

The invention and introduction of the high economy Tungsten lamp, in combination with the new storage battery brought out by me, has reduced the cost of electric lighting for country residences so much that a given house plant to produce the required lighting, formerly costing \$1500.00, can now be furnished for \$500.00.

I enclose a small descriptive circular which will give you some idea of this kind of business, including costs.

If you wish for further printed matter in this direction, or if you desire to keep posted as to my future products of our factories, we will be happy to have them mailed to you.

Yours truly,

*Edison's New York*

*From the Laboratory  
of  
Thomas A. Edison,  
Orange, N.J.*

*Form A*

*Dec 12, 1911*

Dear Sir:-

Your favor in regard to my statement covering the subject of house lighting plants has been received.

In reply I beg to say that I have rented a large residence near by and am having it furnished and equipped with one of the complete plants for demonstration purposes. This will be ready in the near future, and then I will send you word and you can come over and see it if you wish. You will be kept posted as to this and other products of my Laboratory.

In the meantime, the figuring out of the territory is receiving careful attention, and by the time the demonstrating plant is in full operation, I expect to be in position to allot specific territory to those who then desire to take up the business. We can then consider all the details of arrangements to be made as to material, shipments, payments, etc. I think it will be best to defer arranging for a personal interview or the making of any definite agreement by correspondence until then.

Yours very truly,

*Mr  
Mrs  
Henry Adams  
Boston*

*WE seek nothing  
outside of what is*

*Battery, Stungo.  
House Lighting*

Dec. 10, 1911.

6 Rowing Sq  
Boston

Dear Hitch;

I am under the impression that there is a clause in the property restrictions of Llewellyn Park to the effect that no buildings in it are to be used for commercial purposes. This would run counter to your plan of the house lighting proposition. It would be humiliating to Mr. Edison and to the family as a whole to have a cull down from the neighbors, so I suggest that you look into the matter before actual work has gone very far.

Hopping that you are feeling as fit as ever, I am,

Very sincerely,

*Charles Edison*

Dec. 12/11

Mr. M. C. Cornell,  
52 Broadway,  
New York City.

Dear Sir:-

Your favor of the 3rd inst. came duly to hand. Undoubtedly you subsequently received the booklet and letter which I sent you. If you did not, please let me know and I will send duplicate.

In regard to the small electric delivery wagon, I beg to say that I am not quite ready to exploit this. The #2 experimental wagon is still running on the test which I outlined to you when you were here. When that test is finished I shall complete #3 and then put it through an exhaustive series of tests, after which, I believe, we shall be able to consider the commercial type. This, however, will take some time, and we shall not be ready to talk business until sometime in the coming year.

In regard to the house lighting system, I am having a house furnished and equipped with a complete demonstrating plant, which I expect will be ready in the near future. If you are interested in this, I will advise you later and you can come over and see it. If then you wish to go into

M.C.C.

(2)

Dec. 12/11

the house lighting proposition, we can then talk about  
territory, terms, etc.

Yours very truly,

TAE/RS

FRANK H. COYNE  
60 STATE STREET  
BOSTON, MASS.  
Telephone 8787 Fort Hill

December 13, 1911.

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

I am in receipt of your favor of Dec. 12th and will await further notification from you of the equipment of your demonstrating plant. I would be pleased to go to Orange, N. J., and inspect same when you advise me that you are ready for such inspection.

I am

Yours very truly,



FHC/M

Cement House

DEC 13 1911

Hulcheway

Hitch - see me about pouring  
steel box full dope

How is house getting on  
and it dragging

Edison

How long will it take for  
that Catalogue writer  
to be Educated -

I hear nothing from you  
about the foreign calls  
Lithia - E

Electricity

December 16, 1911.

Mr. Edison,

I have received a letter from Hahne and Company of Newark, as follows:

"As I understand you are about to give a practical demonstration of the different electrical appliances for modern house-keeping, and incidentally to have a furnished home in Llewellyn Park, we would be pleased to co-operate with you in furnishing this home, or loaning you the complete outfit of furniture, if agreeable to you.

Respectfully,

Hahne and Co.

By Albert J. Hahne."

I am writing Mr. Hahne that I will be very glad indeed to talk the matter over with him, during the early part of next week. I am suggesting that he come over himself to look over the house, and decide on how it should be decorated. I think it will be very much better to have the house fixed up nicely, than it would to take people into an empty house. It will be a good ad for Hahne also.

M. R. EDISON.

*Watch -  
see us about hazards  
pay - that there is  
nothing done to  
make us liable  
except return of the  
goods -*



Dec. 20th, 1911

Mr. M. R. Hutchison;

The progress made in the wiring of "Show House" since yesterday is as follows:

All openings on top floor are cut and ready to pull in the wires, with 2 exceptions of the upper landing of stairs and the newall post on stairs.

On the lower floor, the wires are in place for the dining room, parlor center fixtures, side brackets in the reception room, also the switch loop from cabinet in the Foyer hall to control parlor center chandelier, has been run.

Mr. Clifton and wife, owners of the house, were out and I pointed to them the several repairs enumerated in letter of December 1st, sent to the real estate agent. They said they had not been advised from that source, but would take the matter up at once. A duplicate letter of that sent to Hamilton & Son, agents, was forwarded to Mr. Clifton at #132 Nassau St., on tonight's mail.

Yours very truly,

*H. A. Lovell*

*M. L. Dism-*

*For your information  
Hutch*

*Share requested  
Adairly report.*

Are you still open for a  
proposition for introducing  
one of Mr Edison's new  
inventions.

Meadocraft

**Edison General File Series**  
**1911. Battery, Storage - Country House Lighting - Windmill (E-11-10)**

This folder contains correspondence and other documents relating to the technical and commercial development of Edison's alkaline storage battery. The material consists primarily of correspondence with windmill manufacturers from whom Edison sought product information in the hope of using windmills "for supplying electric current for farm houses and other isolated buildings through the medium of my improved Storage Battery."

Approximately 30 percent of the documents have been selected. The items not selected include printed information, letters from manufacturers unable to satisfy Edison's request for information, and multiple copies of his letter of inquiry.

05. - Windmill

Ribbed, Aris July 9-11.

Thomas, A. Edison,

Dear Sir:

*If someone can get a patent on windmill  
I have the storage battery  
patent* JUL 13 1911

There is an invention which is being perfected in Baltimore, in the Page Machine Co, which I believe would bear careful and urgent investigation.

This invention overcomes all crank motion, and in my judgment should be the ideal for wind-mills.

Not knowing just what advancement has been made in the storage system; but that some Cleveland people are on the trail.

I only met you once in the big town, and that was in 87, and latterly had a glimpse at you believe in Helena 2 or three years ago.

I remain,

Yours Truly, and likewise a Babbage

*Adam Schwell*

Address care Ribbed Review.

Call Address "Edison, New York"

From the Laboratory  
Thomas A. Edison,

Orange, N. J. October 12th, 1911.

*Mr. McDaniel*

McDaniel & Son,  
Litchfield, Ill.

Dear Sirs:

I am working out a method of utilizing the windmill for supplying electric current for farm houses and other isolated buildings through the medium of my improved Storage Battery, and shall be glad to receive your catalog. If you can also conveniently send me blue-prints of details, they will be of assistance to me.

Yours very truly,

Thomas A. Edison

*per mwa*

NOV 4 1911

Gentlemen:- As we are not making a geared mill we do not believe that we have any thing that would be of any benefit to you, all the mills we are making are for pumping and have a verticle stroke, thanking you for the inquiry, and if you do succeed in getting up a plant of this kind, we would like to hear from you as there would be a big field for this kind of machine in the territory we are working.

Yours truly,

McDaniel & Son

*Edison*

B.S. -  
windmills

Oct. 13th, 1911

Messrs. Fairbanks, Morse & Co.,  
481 Wabash Ave.,  
Chicago, Ill.

Dear Sirs:-

I am working out a method of utilizing the windmill for supplying electric current for farm houses and other isolated buildings through the medium of my improved Storage Battery, and shall be glad to receive your catalog. If you can also conveniently send me blue-prints of details, they will be of assistance to me.

In studying the subject of windmills in general I have been able to find but little literature treating of it. Perhaps you can refer me to some books that you consider worth while. If so, and you will kindly send me the titles and names of publishers, I shall be obliged.

Yours very truly,



## WOODS & CO.

59 PARK PLACE

AERMOTOR WINDMILLS  
STEEL FIRE BELL TOWERS  
STEEL AND WOOD TANKS  
STEEL TANK TOWERS  
GASOLINE ENGINES  
ANTI-FREEZING OIL  
PUMPS, PIPE, ETC.

CABLE ADDRESS:  
"MILLWIND" NEW YORK  
A. S. C. (5TH EDITION) CODES  
AERMOTOR

TELEPHONE: BARCLAY 7030

NEW YORK. 10/14/11

Mr. Thom. A. Edison,  
Llewellyn Park, N.J.,

Dear Sir,

At the request of Mess. Phillips & Worntington of this city, we have mailed you under separate cover a copy of our illustrative catalogue "Aermotor Applications of Wind Power". Pages 41 to 45 treat particularly on power Aermotors which are used for operating light machines of any description, which do not require more than 1 $\frac{1}{2}$  to 4 H.P.

Regarding the driving of dynamos or other electrical apparatus, would say that some 10 or 12 years ago we shipped to the Island of Barbados, British West Indies, a 16 ft. power Aermotor for the purpose of generating current for a storage battery system which was supplied by the Westinghouse people. We understand that this plant was used to light a small park and band stand in Barbados, and the contractor's agreed to give light one day a week, but they found after the plant was installed that they could just as well as not supply light seven nights a week, and did so. The outfit was continued in operation about one year, and then abandoned on account of the excessive cost of storage batteries which required replenishing from time to time.

We have had hundreds of applications from prospective purchasers who wanted to install small lighting plants, the power of which was to be generated by our Aermotor, but have hesitated to submit definite information on the electrical part of the equipment, because up to the present time we have rather thought that not alone was that part of the outfit excessive, but that it had not been perfected sufficiently.

We make two styles of Aermotors, one known as the pumping Aermotor, which operates a pump pole having a perpendicular motion, this pump pole being in turn attached to the head of the pump; our other style of mill as known as the power Aermotor, which drives a 3/4" or 1" steel shaft, which in turn is connected to a foot gear as shown on page 44 of our catalogue, and from this foot gear we belt up to the various machines that are to be operated.

These power Aermotors are very popular with the farmers and in the Island of Curacao, Dutch West Indies, where considerable corn is grown, almost all of it is ground by our power windmills. In the Turks Islands, British West Indies, they have been grinding salt by Aermotors for the last fifteen years.

If we can furnish you with any additional information command us.

Yours very truly,

WHW/A

Oct. 15th, 1911

Messrs. Wood & Co.,  
59 Park Place,  
New York City.

Gentlemen:-

Your favor of the 14th inst. is received and I beg to thank you for your prompt attention to my request.

The illustrated catalogue of "Aermotor Applications of Wind Power" has been received and I have found it exceedingly interesting.

If you will kindly favor me with a list of prices I shall be greatly obliged. It will not be necessary to send me prices of tanks, as I am only working to apply the windmill for generating and supplying electric current.

Yours very truly,



THE BUTLER COMPANY  
WINDMILLS AND VEHICLES  
BUTLER, IND., U.S.A.

Cable Address: BUTLER, BUTLER, IND.  
A. S. C. CODE 42 8475

L. C. Hamilton, Pres. H. C. Hanson, V. Pres.  
E. A. Powers, Mgr. W. C. Hamilton, Secy.

GEO. A. POWERS, SECRETARY,  
AND MANAGER WINDMILL DEPARTMENT

10/16/11

Thomas A. Edison,

Orange, N. J.

Laboratory Dept.

Dear Sir:

We have your esteemed inquiry of the 12th, and take pleasure in forwarding under separate cover complete catalogs, showing our windmills. Our double gear mills shown in #31 catalog would be especially adapted to use you speak of, in view of their great endurance, strength and efficiency, and ability to control themselves automatically in all kinds of winds. They have extremely long bearings, and large shafts, and are long-lived.

If you desire one of these mills with tower for experimental purposes, we should be pleased to ship you one, free of charge, same to remain our property until such time as we might make some other disposition of same. Any changes you might want to make in the mill or tower, to attach your devices, etc, which could be used, you would have our permission to make, without any charge.

We do not know of any device in this country for generating electricity from windmills, except an experimental affair used at Hobbesville, Ind. We understand several houses are wired and a motor is run with water pressure, the water

THE BUTLER COMPANY

T X Y 3E

being pumped into a storage tank with a windmill. We cannot say whether they use storage batteries, or run the lights direct from the motor. We think further information in regard to this plant could be obtained from Mr. Henry Miller, Ft. Wayne, care of Mossman, Yarnelle & Co., Ft. Wayne, Ind.

We thank you for having taken the matter up with us, and wishing you success, we are,

Yours truly

THE BUTLER CO.

P:Y

ESTABLISHED 1872.

NEW HAVEN BRIDGE, PA.

NEW HAVEN BRIDGE, PA.

NEW HAVEN BRIDGE, PA.

NEW HAVEN BRIDGE, PA.



AMERICAN GRINDING MILLS  
BRONX, N.Y.



CABLE ADDRESS  
"APMANCO"



EDWARD G. HOBLER,  
SECRETARY & GENERAL MANAGER.

Address all communications to the Company.

*Baltimore, Md., U.S.A.* Oct. 16, 1911.

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Sir:-

Your valued favor at hand and same has had our best consideration.

We sent you our catalogue which will give you description of our windmill, including the ordinary pumping windmill for reciprocating motion and the power windmill which has a line shaft and pulley.

We, of course, would be delighted to have our windmills used for the purpose about which you speak and we know that you are making great progress in the art, but from our present knowledge we could not recommend a windmill for the purpose you suggest, and in recent years the gasoline engine has come in and entirely supplanted what we call our power windmill. It is a windmill with line shaft and pulley to drive machines on the farm. The motion is not steady. If there is no wind you do not get any power and while we have the best governor made on our windmill, the motion will vary with the gusts of the wind a good deal. One moment it might almost stop and then it would come up until it would govern. So the motion might vary from 10 to 400 revolutions a minute.

The pumping windmills are and always will be used for pumping water, although even then the gasoline engine being absolutely possible is hurting the trade.

We have a very large business founded on honor and brain and do not have to misrepresent our goods or what they will do in order to make sales and it is the writer's strong opinion, after many years of experience, that a windmill is not the proper thing to generate electricity. Even a pumping windmill which will develop a small portion of 1 H.P. when reciprocating motion with a tower, costs nearly double erected, what a 1 H.P. Gas Power Engine does, and while it is the cheapest power in existence, yet its uncertainties and want of dependability to be used just when you want it inefficient for the purpose in which you are figuring.

This subject of making electricity with wind power has been taken up many times, and it would be ideal if the conditions were just right. Should you wish to experiment in this direction, we would be glad to give you every detail possible but blue print would do you no good as you can simply imagine in the case of a pumping windmill a reciprocating motion of from 4 to 7" is desired making up to 45 strokes a minute and on the other hand the power windmill is

W2 HANBROCK, Pa.

W2 HANBROCK, Pa.

ESTABLISHED 1872.

220 W. HORTON, Texas.

CHARLES P. HOBLER, Gen. Agent.



AMERICAN GRINDING MILLS  
PULPING MACHINERY.



CABLE ADDRESS  
"APMANCO"



EDWARD G. HOBLER,  
SECRETARY & GENERAL MANAGER.

*Batavia, Ill., U.S.A.*

Address all communications to the Company.

T.A.N. #8.

geared and drives a line shaft at a maximum speed of 400 revolutions with pulleys on it same as any line shaft.

We would, of course, be proud to have you buy one of our windmills of either kind to put up and experiment with and under such circumstances would be glad to make you a very low price, while giving you frank advice in the matter.

Yours very truly,

APPLETON MFG. CO.

*E. G. Hobler*

(GEN. MGR.)

CABLE ADDRESS "ECLIPSE" CHICAGO.

# FAIRBANKS, MORSE & CO.

(INCORPORATED.)

CHICAGO,  
ST. LOUIS, CINCINNATI,  
LOUISVILLE, SPOKANE,  
SALT LAKE CITY,  
DETROIT, INDIANAPOLIS,  
LOS ANGELES, PORTLAND, ORE.,  
NEW YORK.

GASOLINE & OIL ENGINES,  
MARINE ENGINES,  
GAS PRODUCERS AND  
PRODUCER GAS ENGINES,  
AIR COMPRESSORS,  
STEAM ENGINES & BOILERS,  
STEAM & POWER PUMPS,  
DYNAMOS & MOTORS,  
ELECTRICAL MACHINERY.

FAIRBANKS' STANDARD SCALES,  
FAIRBANKS' AUTOMATIC SCALES,  
ECLIPSE & STEEL WIND MILLS,  
TANKS, TOWERS & SUPPLIES,  
HOSE & BELTING,  
TRUCKS & BARROWS,  
HOISTING APPARATUS,  
PIPE & FITTINGS,  
BRASS & IRON VALVES,  
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RAILROAD SUPPLIES,  
MOTOR CARS AND BUS CARS,  
VELOCIPEDS, TRACK JACKS,  
TRUCK TOOLS & SPECIALTIES,  
COALING STATIONS,  
WATER STATIONS,  
STAND PIPES,  
TURNABLE MACHINERY,  
MINING MACHINERY.

DENVER,  
ST. PAUL, MINNEAPOLIS,  
OMAHA, KANSAS CITY,  
SAN FRANCISCO,  
CLEVELAND, SEATTLE,  
SANTA MARIA, BAKERSFIELD,  
LONDON.

DEPT. SUPPLY, FEB. 1911  
Kindly put the above order on file



300 SOUTH WABASH AVENUE

CHICAGO, ILL. Oct. 16th, 1911.

Mr. Thomas A. Edison,  
Orange, New Jersey.

Dear Sir:-

In response to your personal letter of the 13th, we certainly wish you every success in your experiments for the utilization of wind power for supplying electric current through the medium of your improved Storage Battery, and shall be most pleased to render you every assistance in our power.

Unfortunately our trade catalog #65 F is out of print and the new catalog will not be ready until the first of the coming year. However, the writer has secured a copy of catalog #65 F from our files and we are sending it to you under separate cover. While #65 F is a reference to the construction of windmills than the ordinary trade catalog, but perhaps it may not be of much service to you on account of its referring almost exclusively to pumping windmills.

The power windmill i.e. the windmill designed to deliver power in a rotary form has almost disappeared from the American market as it is being commercially replaced by the small 1 and 2 H.P. gasoline engines. We took the last of our power windmills off the market three years ago and are not now building them.

We are mailing you under separate cover several copies of our old circular on the 14' Eclipse geared windmill, also of the large Eclipse windmills ranging from 16' to 25' in diameter. We still have the patterns of these machines but have not made any of them for three or four years.

The 20' Eclipse power windmill may be of interest to you, as it was the size and style of windmill used by Mr. McQuesten in 1892, in constructing a windmill driven electric light plant at Marblehead Neck, Mass.

We are inclined to believe that you might be able to secure some information in regard to the plant from Messrs. Chas. J. Jaeger & Co., Boston, Mass., who were our Boston representatives at the time. Our information in regard to the outfit is meager but we understand that the mill stood on a 75' wooden tower.

Mr. Thomas A. Edison,

#2.

Chgo., Oct. 16th, 11.

The dynamo was a 3 Kw. Lewis machine. It charged a battery consisting of 46 Bradbury-Stone storage cells of 200 ampere-hour capacity.

We are attaching hereto a type-written description of this plant copied from an old catalog of ours issued in 1895. We are also attaching a list of book and magazine articles on the subject of windmills which may be of some service to you. We specially recommend the article in the Railroad Gazette of May 5th, 1899, on the subject of electric power from windmills.

We would also suggest that you get the circulars issued by J. G. Childs & Co. Ltd., London, England. They seem to have done some practical work along this line.

The writer regrets that he is unable to give you any technical knowledge in regard to windmills, as all of his knowledge was secured in the school of "Hard Knocks". We trust however that we may have given you some leads which may be profitably followed up.

Trusting that we may be of further service to you, we are

Very truly yours,  
Fairbanks, Morse & Co.,  
Supply Department.

Dict. *J. C. Benedict*  
*mjs*

[ATTACHMENT/ENCLOSURE]

WINDMILL LITERATURE.

- "The Windmill as a Prime Mover" by Alfred R. Wolff, M.R.  
Published by John Wiley & Sons, New York, 1885. *Handwritten: This is in a later edition of the book.*
- "Experiments with Windmills" by Thomas O. Perry, Water-Supply  
and Irrigation Papers No. 20 of the U.S. Geological  
Survey. Government Printing Office, Washington, 1899. } *Have written for this volume*
- "Experiments in grinding with small steelfeed mills"  
Bulletin No. 82 Agricultural Experiment Station,  
University of Wisconsin, Madison, Wisconsin 1900.
- "The Windmill; Its efficiency and economic use"- Two vols. } *Have written for these volumes*  
Water Supply and Irrigation Papers Nos. 41 and 42  
of the U. S. Geological Survey. Government Printing  
Office, Washington, D.C. 1901.
- "The Trials of Wind Pumping Engines at Park Royal, 1903"  
By the Royal Agricultural Society of England, London.
- "Windmills in Foreign Countries". Special Consular Reports  
Vol. XXXI. Government Printing Office, Washington. 1904.
- "Powerful German Windmills" by Charles B. Hayward in the  
Scientific American, March 25th, 1905.
- "Electricity from Wind Power" By Alfred Gradenwitz,  
in the Technical World Magazine, April 1905.
- "Wind Power Electric Light Plant" Power, December 1905.
- "Wind Made Electricity" Page 98 of the Technical World  
Magazine, March 1906.
- "Electric Power from Windmills", Railroad Gazette, May 5, 1899.
- "A Country House Wind-Turbine Electric Plant"  
Electrical Review, November 26th, 1909.

[ATTACHMENT/ENCLOSURE]

WIND MILL ELECTRIC LIGHTING PLANTS.

The combination of a windmill and dynamo for generating electricity has been a subject of intense interest and very close study for years past, and it is only recently that electric appliances have been perfected so that they could be used to good advantage in connection with a windmill. The varying speeds of a windmill are provided for by special dynamo construction and the perfection to which the electric storage battery has been brought makes it a simple matter to store the energy of the plant until it is wanted. In the development of this combination of the windmill, dynamo, and storage battery to its present successful status, it was found that only the very best construction in the details of the windmill itself could be used, owing to the exacting requirements of electrical work, and we have made the Eclipse as thoroughly complete for its duty as possible.

There being no public system of lighting at Marblehead neck, (a summer resort), private plants had to be resorted to. In the spring of 1892 Mr. McQuesten put in a small electric light plant, consisting of a boiler, 2 H.P. engine, 3 Kw. dynamo and a set of 46 cells of storage battery, having 140 amp.-hour capacity. This plant was put in the stable and cost complete \$1,000, supplying lights to the house and stable. The batteries were charged once a week either by the proprietor or the gardener after he had been taught to run the plant. The necessity of economizing on the use of light was felt, however, and so, except on special occasions, not more than about 100 amp.-hours a week was used in the summer time. Later in the fall the batteries had to be charged twice a week. This plant was run winter and summer; in the winter the lights were used by the caretaker, but it was found to be a matter of some inconvenience to take the gardener's time for charging the batteries in the summer season when his other duties were of equal importance, and to meet this difficulty and to save the cost of operating the steam plant, Mr. McQuesten put in a windmill outfit, equipped with automatic regulators and self-tending devices, arranged to run and charge the batteries without special attention from anyone. This was completed on May 1st and has worked well ever since. The outfit is illustrated on page 29 and consists of a 20 foot Eclipse wind Mill, mounted on a tower 75 feet high to center of wheel from ground. Power is transmitted through bevel gears and 1-5/8 inch shafting to the house built at the base of the tower, which is 18 feet 6 inches square at that point. At the same time a larger set of batteries were installed so that another house could be supplied with light, the old set being in good condition but not of sufficient capacity. The dynamo is a 3-Kw. Lewis machine, but ought to be 4 or 5 Kw. as the windmill develops more power than was anticipated. This charges the battery, consisting of 46 Bradbury-Stone storage cells of 200 ampere-hour capacity. Ninety volt lamps are used, and an automatic switch closes the circuit between the dynamo and storage batteries when the potential of the dynamo rises to the required voltage and breaks the circuit when the current stops flowing into the batteries.

This plant furnishes, for two dwelling houses, a stable, work shop and the windmill tower, in all 137 lamps. During the shortest evenings 40 lamp hours per evening are used. The amount increases gradually until on Nov. 1st 90 lamp hours per evening are required. At times when there is plenty of wind, the shop which adjoins the windmill tower, at first run by an electric motor from the batteries, and later the motor has been used altogether when the shop has been run.



[ATTACHMENT/ENCLOSURE]

The dynamo is provided with a series coil on the field, wound differently to the shunt, so the machine delivers current at a constant potential at various speeds. Mr. McQuesten tried the experiment of cutting out the differential winding and running the dynamo as a simple shunt wound machine. It worked beautifully in light winds, for as the wind increased the tendency of the wheel to revolve too fast was checked by the increasing load on the dynamo, thus maintaining a practically constant speed and the greatest possible efficiency.

This was very satisfactory until the force of the wind increased, so that the wind mill delivered to the dynamo more power than it could safely take care of, and so would have been injured if left running, clearly demonstrating the advantage of differential windings, which allows the dynamo to run at high speed without danger of overloading. This experiment with a windmill has proved entirely satisfactory.

*From 1895 edition Fairbank, more doc. enclosure*

*Am quite sure that this outfit was not  
a commercial success and I do not  
think it is now in service.*  
*F. H. Bendish*

[ATTACHMENT/ENCLOSURE]

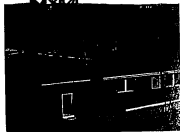
FAIRBANKS, MORSE & CO.



Eclipse Geared Windmills

WOOD WHEEL

The Eclipse Geared Windmill with special, heavy steel gears and shafts is the most substantial, durable and satisfactory motor for driving machinery by wind power made. Large drawings showing detailed construction of the mill will be furnished upon application.



20-FOOT ECLIPSE  
GEARED  
WINDMILL  
ON  
75-FOOT TOWER

*as mounted near  
Mesa*

| Diameter of Wheel,<br>Feet | Horsepower in Wind<br>20 Miles per Hour | Speed of Line Shaft,<br>rev. Minut. | Approximate Shipping<br>Weight, Pounds |
|----------------------------|-----------------------------------------|-------------------------------------|----------------------------------------|
| 11                         | 2                                       | 150 R. P. M.                        | 1800                                   |
| 16                         | 3                                       | 100 R. P. M.                        | 1800                                   |
| 20                         | 4                                       | 75 R. P. M.                         | 2200                                   |
| 25                         | 5                                       | 60 R. P. M.                         | 3100                                   |
| 27 1/2                     | 6                                       | 50 R. P. M.                         | 3500                                   |
| 33                         | 8                                       | 40 R. P. M.                         | 6000                                   |

Prices include all necessary upright shafting and boxes for a 50-foot wood tower, twelve feet of line shafting with boxes, two pulleys, six feet of line shafting with a direct-acting pawling jack, and necessary castings to attach to wood tower. ECLIPSE GEARED WINDMILLS CAN NOT BE USED ON STEEL TOWERS. Great care should be used in erecting power windmills, not to overload them, and see that the mill is perfectly plumb and true. Working drawings and bill of material for building a wood tower for any of the above mills will be furnished to the purchaser.

115 PARK STREET  
E. T. SPENTER, VICE PRES.

BS-Wind

ADDRESS ALL COMMUNICATIONS TO THE COMPANY, NOT TO INDIVIDUALS.

F. B. PARK, SECR.  
R. H. MACDONALD, SUP.

## FLINT & WALLING MFG. CO.

★  
**STAR  
WINDMILLS**  
TOWERS, TANKS,  
PIPE, FITTINGS



KENDALLVILLE, IND.



96 WALL ST.  
**NEW YORK**

★  
**HOOSIER  
AND  
FAST MAIL  
PUMPS**  
GASOLINE ENGINES

10/16/11.

Laboratory of Thomas A. Edison,  
Orange, N. J.

Gentlemen:-

The Pierce Wall Engineering & Supply Co. were kind enough to forward your communication of the 12th respecting windmills to us, since they are not manufacturers in this line.

It is with great pleasure that we hand you under separate cover a copy of our general catalogue illustrating and describing our line of windmills, and it is certainly very interesting for us to know that you are developing a suitable battery for the storage of power as developed by windmills. We would, therefore, be glad to provide you with any and all data we have in reference to this style of motive power, and trust that you will feel at liberty to call upon us at any time.

Yours very truly,

FLINT & WALLING MFG. CO.

*Clawson*  
MGR.

VEC/H

H. L. PARK, PRES. & TRGAS.  
E. T. PORTER, VICE PRES.

ADDRESS ALL COMMUNICATIONS TO THE COMPANY, NOT TO INDIVIDUALS.

F. B. PARK, SECK  
H. H. MACDONALD, Supt.

## FLINT & WALLING MFG. CO.

★  
**STAR  
WINDMILLS**  
TOWERS, TANKS,  
PIPE, FITTINGS



★  
**HOOSIER  
AND  
FAST MAIL  
PUMPS**  
GASOLINE ENGINES

KENDALLVILLE, IND.

10-16-11

Thomas A. Edison,

Orange, N. J.,

Dear sir--

Responding to your kind inquiry of the 12th, concerning catalogue of the Star Power wind mills, to be used in supplying power for electric current to be stored in your improved storage battery, will say, it is our pleasure to mail you under separate cover copy of our #54 trade catalogue. Kindly refer to page 30 illustrating the engine parts, also the different sizes of power mills we build, together with the rated horse power, and other data relative to the speed based on a 15 mile wind.

Our Company would be willing to loan you any size power mill with a stub tower that you might think best for experimental purposes. The base plate of the stub tower will be arranged for bolting to timbers on top of a building if so desired.

Thanking you very kindly for the communication, and awaiting with interest your further pleasures, we are,

Your very truly,

FLINT & WALLING MFG. CO.

E. T. PORTER.

K.

HOMER MANVEL, Pres.  
JOHN CRISPE, Vice Pres.

DELIVERIES SUBJECT TO STRIKES, PRIOR SALE OF STOCK OR DELAYS BEYOND OUR CONTROL.  
ALL ORDERS AND CONTRACTS ARE SUBJECT TO THE APPROVAL OF THE COMPANY AT THEIR OFFICE, KALAMAZOO.

J. E. ROCKWELL, Secy & Treas.  
GEO. F. YOUHANS, Sup.

ENSILAGE  
CUTTERS,  
CATTLE  
STANCHIONS,  
STEEL TOWERS.

OWNED AND LICENSED  
PATENTS ON SILOS  
NO. 624,751 OCT. 17, 1899  
NO. 627,732 JUNE 21, 1899  
NO. 748,017 DEC. 8, 1903  
NO. 854,010 MAY 21, 1907



WOOD  
OR STEEL  
WIND  
MILLS  
& TANKS.

OWNED  
ENSILAGE CUTTER PATENTS  
NO. 802,620 NOV. 3, 1908  
STANCHION  
NO. 802,761 NOV. 10, 1908  
PATENTS PENDING.

KALAMAZOO, MICH.

Oct. 16th, 1911.

Mr. Thos. A. Edison,

Orange, N. J.,

Dear Sir:

Your letter of Oct. 12th, relative to the utilization of the wind as a power for generating electricity and using it through storage batteries, is of interest to us. We have been watching this matter very closely, although at the present writing we are not in position to give you any prints or illustrations of our details outside of pumping wind mills. We have seen from time to time articles which stated that a storage battery that was comparatively low in price; one that could be utilized on farms, had been devised, and as we say above, have been watching this thing with a great deal of interest.

Several years ago we spent quite a little money in experimenting in a large wind mill, 20 feet in diameter, but the writer had to push it along against the judgment and wishes of parties interested with him, and after spending quite a bit of money we laid it one side, but are in position now where we hope to be able to take it up in the near future, but if you have got any data that would show the cost of a storage battery that would hold enough electricity to pump say 3,000 gal. of water a day, and light and heat and do the cooking in a ten room house, we wish you would kindly send us any information you may have in regard to this matter.

Yours very truly,

HM/ELS

KALAMAZOO TANK & SILO CO.

H. Manvel



*Saginaw, W. L. Mich. 10/16/11.*

Thomas A. Edison,  
Orange, N. J.

Gentlemen:

We have yours of the 12th addressed to The Wolcott Windmill Co. and to the National Engineering Co. relative to Windmill catalogues, but regret to advise that we discontinued manufacture of Windmills some four years ago limiting our out-put entirely to gasoline engines.

Yours truly,

NATIONAL ENGINEERING CO.

OEM/F.



W. A. HANCE, President

R. S. STOVER, Vice Pres.

# THE STOVER MANUFACTURING CO.

ESTABLISHED 1882.  
INCORPORATED 1882.

CABLE ADDRESS  
"IDEAL."

CODES  
A.R.C. 5<sup>th</sup> EDITION  
LEADER  
WESTERN UNION  
PRIVATE



WIND MILLS.  
FEED MILLS.  
PUMP JACKS  
BUILDERS & SPECIAL  
HARDWARE.

ADDRESS ALL COMMUNICATIONS TO  
THE COMPANY, NOT TO INDIVIDUALS.

Freeport, Ill.

Oct. 18th, 1911

Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Answering yours of Oct. 12th to ourselves and to Bennett Bros., Lowell, Mass., who handle our products in the New England States, we are sending our last Power Wind Mill Catalog to you under separate cover.

During the last ten years the sale of power wind mills has been continually decreasing owing to the increased sales of small Gasoline Engines for power purposes. There is, without question, a very large field for wind engineering in electrical lines but no one has developed this industry to any marked degree. We have in the past furnished Power Wind Mills to the Wind Power Electric Co. of Madison, Wis. but we do not know with what success they have met.

If there is more information regarding our Wind Mills that you desire and cannot find it in our catalog, we will be glad to communicate further with you. We manufacture a line of Pumping Wind Mills, the sale of which comprises the greater portion of our business. This mill you will find illustrated on page 46 of catalog. If such a wind mill will interest you we will be glad to send complete catalog on it.

Yours truly,

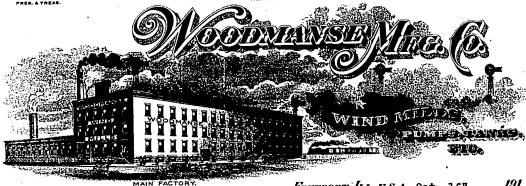
STOVER MFG. CO.

JD/MB

H. WOODMANSE,  
PRES. & TREAS.

FRED DORMAN  
VICE-PRES.

G. E. STEENROD,  
SECRETARY



FREEPORT, ILL. U.S.A. Oct. 16<sup>th</sup> 1911

Mr. Thomas A. Edison,

Orange, N.J.

Dear Sir:-

We are very much pleased to mail you a catalog, on page 28 and 29 you will find cuts of the windmill towers, and on pages 32 and 37 you will find no doubt, what you are asking for.

Mr. H. Barbour, who lives near you, has some of these windmills in operation with one of your batteries. He is talking about wanting you to attach one of our windmills to a battery here at home where we can watch its' operation. When you get the details worked out we will take great pleasure in doing all we can to help you along. We would like to know the cost of a battery as used by Mr. Barbour.

You will notice, that this windmill, like all our power windmills, has a swivel in the gearing, so there is no draft on the gear, or what is name by windmill manufacturers, walking around the gear, and as a result our windmill faces the wind and governs properly, while in other mills when the power required to drive the machine is more than the force of wind the wheel walks around the gear instead of moving it.

Yours truly,

WOODMANSE MANUFACTURING COMPANY

G



[October 17, 1911]

Would like an answer to  
following

1<sup>st</sup> Can you substitute roller  
bearings for babbitted bearings  
so as to get maximum power at  
low wind.

2<sup>nd</sup> Would it be practicable  
to connect the dynamo through  
gearing direct with the wheel  
shaft & let it swing with it, if  
proper roller bearings were used  
thus dispensing with the  
vertical rod & bevel gear.  
The dynamo would weigh about  
100 lbs - & offers about 1/2 a  
foot surface to the wind.

Edison

Oct. 17th, 1911

Flint & Walling Mfg. Co.,  
96 Wall St.,  
New York City, N. Y.

Gentlemen:-

You favor of the 16th inst. and catalogue have been received, and I thank you for same.

I would like to have information on the following points:

1. Can you substitute roller bearings for babbitted bearings, so as to get maximum power at low winds?
2. Would it practicable to connect the dynamo through gearing direct with the wheel shaft, and let it swing with it, if proper roller bearings were used, thus dispensing with the vertical rod and bevel gear? The dynamo would weight about 100 pounds, and offers about half a foot of surface to the wind.

Yours very truly,

Walter I. Gray,  
President.

Charles J. Jagger,  
Treasurer.

Charles J. Jagger Company  
13-15 Custom House Street.

Providence Office, 33 Canal St.  
Shops and Warehouses  
Lynnfield Centre, Mass.

Boston, October 17, 1911.

In reply to you of \_\_\_\_\_ inst

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Sir:-

Your letter of the 12th brings back memories of a long struggle with windmills and Storage Batteries for electric plants which we have handled in the past. We have nothing in the way of illustrations of special apparatus covering this line of work. The writer has in his desk only one copy of an old catalogue which he cannot very well spare, showing the most successful installation along this line which we have made. This is a 20' diameter wooden windmill, mounted on an 80' hard pine tower driving a generator especially compounded for Storage Battery work. The average output during the summer season at Marblehead, Mass., was sufficient to provide for continuous service to three houses using an average of 45 lamp hours daily throughout the summer months, and we are giving you a record of the summer service, because this is the minimum output from such a plant. It would be safe to figure on at least double this output during the winter season. While the plant was successful from an experimental basis we have never felt warranted in making any commercial exploitation of same.

We shall be glad to give you any information at our command, and remain,

Yours very truly,

CHARLES J. JAGGER COMPANY.

Dist. by *Handwritten Signature*

(SMN)

*Handwritten Signature*

B. S. - Windmills

Oct. 18th, 1911

The Butler Company,  
Butler, Indiana.

Gentlemen:-

Your favor of the 16th inst., and also your catalogue, have been received, and I beg to thank you for your prompt attention, as well as for your kind offer to lend me one of your windmills for experimental purposes.

In all probability I shall avail myself of your offer later on, but at the present moment I am not quite ready to make tests with a windmill, as I have only just commenced to study the subject and there is much preliminary work to be done in preparation for the final attainment of my purpose.

In the meantime I would like to have information on the following points:

1. Can you substitute roller bearings for habbitted bearings, so as to get maximum power at low winds?
2. Would it be practicable to connect the dynamo through gearing direct with the wheel shaft, and let it swing with it, if proper roller bearings were used, thus dispensing with the vertical rod and bevel gear? The dynamo would weigh about 100 pounds, and offers about half a foot of surface to the wind.

B. Vo.

(2)

Oct. 18/11

I shall also take advantage of your reference to the experimental plant at Noblesville, Ind. by writing to Mr. Miller, as suggested.

Yours very truly,

Oct. 18th, 1911

Mr. Henry Miller,  
c/o Mossman, Yarnell & Co.,  
Fort Wayne, Ind.

Dear Sir:-

I am working out plans for supplying electric current to isolated houses by means of windmills and my new Storage Battery. In a letter from the Butler Co. of Butler, Ind. they refer to an experimental plant at Noblesville, Ind. and state that you can probably give me some information in regard thereto. As I understand it some electric lights are operated from this plant, and I am desirous of ascertaining whether dynamo and storage batteries are employed, and, if so, to what extent and with what success.

Any information you can give me in regard to this plant will be much appreciated.

Yours very truly,

B.S.  
Windmills

Oct. 18th, 1911

Messrs. Fairbanks, Morse & Co.,  
900 South Wabash Avenue,  
Chicago, Ill.

Gentlemen:-

I am in receipt of the favor of your Mr. Benedict under date of the 16th instant, and thank you for the catalogue and for your prompt attention, as well as for the full information you have given me. It will be of much assistance.

I believe that with the use of the 3/4 Watt Tungsten Lamp and my new Alkaline Storage Battery, which will stand any amount of neglect, the windmill can be made a success as a source of power, especially if roller bearings etc. are used, and I am going to work on it. If I succeed, I hope your Company will take up the power windmill again.

Yours very truly,

*Wadsworth*  
OFFICE  
G. H. BARBOUR  
NORTHFIELD AVENUE  
WEST ORANGE, NEW JERSEY

Dear Sir:-

*Tell Barbour come over Tues Oct 18, 1911.  
out Will Catalogue  
ppoint to talk it over*

Under this cover please find copy of the Woodnase Windmill Catalogue together with a separate sheet showing the details of the Power Mill. This is the style of mill I am using here and from which I am able to get effective effort as shown by the ammeter and voltmeter readings of something over a kilowatt for short periods of time.

On page 6 of the catalogue the ring oilers used at present are shown and on page 34 is shown the balanced gear and the main frame for the housing of the same. On page 35 the bed plate and post and the foot gear are shown and on page 36 the pull out rigging is shown. On page 38 the power drive as applied in a great many cases is shown and it will be possible to install a device similar to the one I have installed here as soon as it can be proved that it is continuous in its operation under all conditions.

For the placing of the generator at the top of the mill in order to eliminate the friction as much as possible it is the problem of the proper mounting of the shaft 32B in the main frame 1B in connection with the main wheel spider 5B and the direct drive of the machine without the gearing shown.

An arranging for a low voltage machine of the kind mentioned to you and hope in a short time to have it in hand so that it can be mounted in in this way at the top of the mill and the amount of energy that can be stored in that way can be determined.

Shall be pleased to receive any suggestions you may wish to make in connection with this test and remain,

Dear Sir,

Yours very truly,

*G. H. Barbour*

Thos. A. Edison Esq.  
West Orange,  
N. J.





# THE BALTIMORE COOPERAGE CO

WOODEN AND METAL TANKS,  
STEEL TOWERS.  
CASKS,  
BARRELS,  
KEGS.

PUMPS,  
ENGINES,  
MOTORS,  
WINDMILLS.

Baltimore, Md. October 18, 1911.

We reserve the right to correct all Stenographic Errors.

All Contracts and Agreements contingent on Orders, Accidents and other causes beyond our control. Questions subject to change without notice.

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Sir:

Replying to your favor of the 12th inst., beg to say that we doubt very much if the Wind Mill would be a suitable piece of machinery for a Storage Battery. We have no catalogue giving complete information and believe that you would find it best to experiment with the Wind Mill in connection with your Storage Battery, before placing same on the market.

We are selling very few Wind Mills in comparison with our other equipment.

Very truly,

*Mr. Meadman*

THE BALTIMORE COOPERAGE CO

*J. B. Cooper*

*Mr. Menckhoff*

THE RED KING COMPANY  
MANUFACTURERS OF  
WINDMILLS, TOWERS, PUMPS, TANKS, ETC.  
WAUSEON, OHIO, U.S.A.

Oct. 18th, 1911.

Mr. Thomas A. Edison,

Orange, N.J.

Dear Sir:

Your valued favor of the 12 inst., received in regard to catalogue ect.

We are enclosing a copy of our booklet describing our "CAM LIFT" Windmill which we are having great success with. As to the construction and workmanship of our output, We openly defy any and all dealers or manufacturers to produce a Mill its equal.

We are very anxious to see the Storage Battery successfully used in connection with the Windmill, and believe our "CAM LIFT" Mill will do the work perfectly.

Should you be further interested in our Mill, We would be very glad to send you complete Blue Prints, or better still We would be willing to ship you a sample mill, and should you find our "CAM LIFT" Mill the best, then all We would ask of you in return would be a recommendation, for public use.

Awaiting your further commands I beg to remain

Yours Very Truly,

*Wm. Wood*  
Secty.

H. L. PARK, PRES. & TREAS.  
E. T. PORTER, VICE PRES.

ADDRESS ALL COMMUNICATIONS TO THE COMPANY, NOT TO INDIVIDUALS.

F. D. PARK, SECT.  
H. R. MACDONALD, Supt.

# FLINT & WALLING MFG. CO.

STAR  
WINDMILLS  
TOWERS, TANKS,  
PIPE, FITTINGS



KENDALLVILLE, IND.

HOOSIER  
AND  
EAST MAIN  
PUMPS  
GASOLINE ENGINES

96 WALL ST.  
NEW YORK

10/20/11.

Mr. Thomas A. Raision,  
Orange, N. J.

Dear Sir:-

Answering your esteemed favor of the 17th, would say that while the turn-table bearing on which the mill revolves, and also the thrust bearing which counteracts the wind pressure against the face of the wheel when in motion, are provided with ball-bearings, we are not manufacturing a windmill fitted with roller bearings.

Windmills for ordinary farm use must be made good but cheap, consequently it had not been the practice of windmill manufacturers to make the highest class machinery in this line, however, we appreciate the fact that for the purpose of generating power through an electric device, the wind engine should be made up in a very substantial and perfect manner, and we feel certain that other companies as well as the one we represent, would find it to their advantage to manufacture a suitable mill, providing it was shown that it would be feasible to operate same in connection with the electric generator and storage battery.

Undoubtedly the mill could be constructed to support the generator above the engine or mechanism, allowing same to swing with the shifting of the winds.

Yours very truly,

FLINT & WALLING MFG. CO.

*W. C. Raision*  
Mgr.



L. LEACH, Manager.

## The Leach Wind Mill & Tank Co.

Manufacturers of

WIND MILLS, PUMPS, TANKS AND  
WIND MILL GOODS.

New Factory, Corner Center and Monroe Streets.

Chicago Telephone 2874.

Solids, Ill., October 21st 1910

Mr Thomas A. Edison.  
Orange, N.J.

Dear Sir.

Replying to your inquiry of Oct 12th regarding Wind Mills to furnish power for Storage Battery purpas.  
We will say in reply. We are manufacturers of wind Mills to meet any requirements which our Customers wants, if such requirements can be met by wind power.

We make 4 different Styles of Wind Mills.  
Two of these Mills which are governed with a flexible Vane are exelent Pumping Wind Mills, but are a failure as mills to furnish power where a rotary motion is requ ired. & will add , that, tall wind Mills with flexible Vanes of all makes are not a success to ~~xxx~~ furnish Power where rotary motion is required, Thereforef would be of little use for the purpos which you require .

We make 2 styles of Mills which are bith Centrifugal governing Mills. The se are show. in the inclosed Catalogue as No 3 & No 4.

The no 3 Mill is the one we have made 40 years and in early days was the leading power Mill for over 10 years.

No 4 is practically the same Mill made without a Vane , but in other re spects as governing Mills is the same. But as a power Mill is much sup rior to No 3.

The No 4 1/2 Style of Mills is the only size we now make larger than 12 foot wheels, and is the only style we now make as a power Mill to drive rotary mahinery with, & have made no other style the last 18 years as power Mills. in fact we havehad no call for any other

Style since this mill got into the field. *No 3 1/2 to 6 1/2 ft. same style*  
We now make this No 4 1/2 Mill 12 to 16 foot wheels. *19 mills*

No 5 Mill is not made now, But No 6 1/2 is made 16 & 20 foot wheels.

We now have a later Mill made with 13 & 20 foot wheels in a little d-ifferant form which will furnish power up to 15 horse in a 25 Mile w-inds, and more power in heavier winds. , but less in lighter winds.

There is a good number of the No 5 mills now in operation which have run over 25 years in the western countries. Many of them 20 foot wheels. But there is more of the No 6 1/2 which have run 18 years and less, of all sizes and in nearly all States west from here and some East, which have proven perfectly satisfactory as a mill to run rotary matio with.

We have not put up any Mills to run Storage Batterys with, but have sold Mills which we understood that part of their work would be to light places by storage Batterys, which would be Charged by the power from these Mills. put have never made further inquiry regarding the matter.



L. LEACH, Manager.

## The Leach Wind Mill & Tank Co.

Manufacturers of

**WIND MILLS, PUMPS, TANKS AND  
WIND MILL GOODS.**

New Factory, Corner Center and Monroe Streets.

Chicago Telephone 2274.

Joliet, Ill., \_\_\_\_\_ 190\_\_\_\_\_

No 2 A Successful power wind Mill to operate Rotary machinery with, in order to be a success, must be so constructed that it will not throw itself out of gear and stop when the winds happen to be 50 or 75 or more miles per hour, But keep right on at work just the same as though the winds was only 20 or 30 Miles, and only seas its motion when the winds drop down below that point which keeps the Mill at the speed which the governing weight is set for as a regular speed.

Another still more important matter, is that the Mill must be so constructed as to prevent its revolving around the vertical shaft when aimed to its work.

This difficulty cannot be overcome in any of the flexible vane Mills. The sectional wheel which breaks up in sections is the only style which can be made to overcome this great difficulty in Power Mills with care to furnish rotary motion.

In the Booklet which I am sending you, You will find considerable printed matter treating on the matter of power Mills.

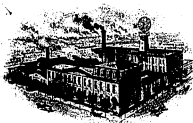
From what information you will obtain here, I think that you will be able to make some valuable conclusions regarding the matter of Power by wind for Storage Batterys

I do not at this time have any Blue Prints of anything which would give you additional light on what you are looking for.

But should you desire further information on any thing pertaining to the matter, I think that we could give it if it belongs to wind power and its appliances. I will be glad to give you any information along this line which is in our power to do.

Yours Truly,

L. Leach.



Factory—Jersey Ave. & 12th St., Jersey City, N. J.  
Telephone, 216 Jersey City

## A. J. CORCORAN

(INCORPORATED)

Manufacturers and Patentees

### Windmills, Pumps, Tanks and Towers

Office: 11 John Street - Telephone, 3947 Cortlandt  
NEW YORK

October 25th 1911

Thomas A Edison Incorporated  
Orange NJ  
Dear Sirs

Your esteemed favor dated 12th inst in the matter of windmills for use with your storage batteries was duly received and would have had attention in due course but the writer has been confined to his home by illness

There has been more delusion and misrepresentation published by the daily papers concerning electricity generated by windmill power than about any other one thing I know

I personally went into the matter very thoroughly some twenty years ago - with a Major Lewis USA - who claimed to have invented and patented a "cut off" and my experiments resulted in lighting my factory for a dinner given to those interested and prospective customers by electricity produced by wind power - as well as doing other nice things - at considerable expense - but - all we did - demonstrated beyond question - that general conditions would prevent an outfit of the kind proving a commercial success

There are - in fact - two items - which hitherto - have been prohibitive

*Pat Buckley*

October 25th 1911

T A E Inc

II

One is an automatic "cut off" and the other - and more important - is an ample storage battery - which - in connection with windmills as motors - is necessary to provide for occasional calms - and is the rock which has proved disastrous

We have the most perfectly governed windmill ever made and it has produced a perfect light from the dynamo directly - that is when we had the wind

We enclose engravings for your consideration - Fig 263 illustrating transmission of power from windmill to dynamo - Fig 115 from windmill to farm machinery - blue print #636 showing an elevation of a windmill frame work and sizes of timbers for sustaining one of our #8 mills having a wheel 22'6" diameter - upright and line shafting - couplings - bearings etc

If there is any special information in this connection desired I shall be most happy to answer any questions you care to ask - or - if you could call here or at my factory by appointment - I shall be glad to meet you

Very truly yours

*A. E. Corcoran*

Oct. 27th, 1911

Superintendent of Documents,  
Government Printing Office,  
Washington, D. C.

Sir:-

Will you kindly forward me the volumes of  
WATER SUPPLY PAPERS, containing Nos. 19 to 30 and Nos. 40  
to 52. I am informed that these are bound in two volumes,  
the prices of which are \$1.50 and \$1.75, respectively. I  
enclose money order covering cost of same.

I also desire to obtain SPECIAL CONSULAR REPORTS,  
volume XXXI, which I believe contains reports on Windmills  
in foreign countries. If there is any charge for this, kind-  
ly let me know the amount and I will forward it.

Yours respectfully,





Answering yours of

**Massman, Yarnall & Co.**

**Sales Department.**

Fort Wayne, Ind. Oct 30 1911

Thos. A. Edison  
Orange N J  
Dear Sir -

Your valued favor of 18<sup>th</sup> came duly to hand. The Windmill Electric proposition was a success but by reason of poor management we never got beyond the demonstration point. Tried to sell territorial rights instead of manufacturing or installing plants. Wrote Mr. F. E. Heyburn Noblesville Ind. to give you the particulars wanted as I was not in close touch with the business & cannot give you the details of construction. An improved storage battery would be an advantage to such a plant. Beg to remain

Yours Truly

Henry J Miller  
Y. Massman Yarnall & Co

*Outlets - Windmills*

73rd ANNUAL SHOW, DONCASTER, JULY 2nd to 6th, 1912.

*It is particularly requested that all communications may be addressed to "THE SECRETARY."*



TELEPHONE GERRARD 2675,  
TELEGRAPHIC ADDRESS,  
"PRACTICE, LONDON"

*Royal Agricultural Society of England,  
16, Bedford Square, NO. 17 311  
London, W.C. November 7th., 1911.*

Dear Sir,

I am in receipt of your letter of the 27th October with reference to the Society's Trials of Wind Pumping Engines at Park Royal in 1903. This report was issued in pamphlet form, but I am sorry to say that I am unable to send you a copy, as the whole of the issue has been exhausted.

The Society's Journal for 1903 contains the report, see pages 174 to 220 of the copy I have had the pleasure to send, by book post, for your acceptance.

Yours faithfully,

*J. S. M. Row.*

Secretary.

Thomas A. Edison, Esq.  
The Laboratory,  
Orange, N. J.



L. LEACH, Manager.

## The Leach Wind Mill & Tank Co.

Manufacturers of

**WIND MILLS, PUMPS, TANKS AND  
WIND MILL GOODS.**

New Factory, Corner Center and Monroe Streets.

Chicago Telephone 2874.

*Joliet, Ill., Nov. 5th 1911.* 190

Mr Thomas A. Nelson.

Orange, N.J.

Dear Sir. Some days since I replied to your letter of the 13th of October regarding Power Wind Mills to operate Storage Batterys. Since that time I have herd from a number of parties who have been using our power Mills the last 20 years and less, and when mentioning the Storage Battery to some of them. They all seem to be favorable inclined to use them.

One Party was at our Factory Yesterday who has been using one of our 16 foot Power Mills the last 5 or 6 years, he informed me that he was going to have one instaled very soon. he requires the use of light and nnd his barns from 2 to 4 hours during the short days when they have to do their Chores up to 7 or 8 PM before they are through, and in the short winter days, the use of light is valuable. With his mill he says he can grind feed, 15 to 18 bushels pr hour in 20 to 25 mile winds. & he knows he has all of the power in ordinary winds to do his work with battery. He also prefers the storage Battery aute when he can store his own power.

It is my opinion that when this storage battery is once started, that The Farmers in many localitys will keep their streejs and Yeros lit up untill about 9 PM. Winter times.

With the Storage Battery, they do not care wheather the wind blows all of the time or not.

There is hundreds of Farmers in the North west where the day light is shorter than south which have our Power Mills now in operation. Some in Northern Canada, it seems to me that the Storage Battery and power Mills should be a great outfit for People car up to the Artic Circle in winter time.

In the futur, I will take a little more care to find out the feeling of People who have power Mills regarding the Storage Battery business.

I am confident that the most of Farmers would buy Storage Batterys Abto s if they had the means of storing the power. or charging the batteries at home.

Yours Truly,

L. Leach.

*W. Macdonald*

[ATTACHMENT/ENCLOSURE]

—THE—  
**VANELESS GOVERNOR**  
**13-FOOT GEARED WIND MILL.**



The accompanying cut, No. 334, shows the position of our Vaneless Governing Windmill when out of gear, or during a hard wind storm, such as often will destroy other styles of mills. It swings behind the tower like a flag on a staff, with the points of the sections straight in the eye of the wind.

The wheel may be thrown into this position either by the throw-out lever, or in case that a heavy gust of wind should increase the motion of the wheel beyond the power of the counter-acting weights, the sails would tip more or less into this position in order to throw off the increased power of the wind that would cause a sudden surge on the line shaft which might throw off some belt or cause other trouble. As for instance, when we are driving machinery that will stand only 25 revolutions of the wheel per minute, we set the counter-acting weight for that motion, and we know that no wind will cause it to run much faster than we have set it for. If our machine will stand 35 revolutions of the wheel we set it for that motion, and so on.

This is the one great reason why the Vaneless Governor Geared Mills have proven so much superior to many of the geared mills that are now on the market, and have been purchased by parties who did not know that there was much difference between one kind and another.

**Warranty on the Vaneless Governing Power Windmills.**

- 1st. We warrant the Vaneless Governing Power Windmills to be well made and of good material.  
2d. To operate as stated above when properly set up on good substantial towers and properly cared for.  
3rd. We also agree to furnish, free of charge, of our factory, for one year from shipment of the same, any part or parts which prove to be defective by reason of improper manufacture.

About one-fifth of the power of geared-power mills is generally used up in friction before it reaches the work to be accomplished. Therefore a 13-foot wheel is as small as any one should select for ordinary work. The 13-foot Vaneless Governing Mill is intended for light power, from 2 to 2-horse, in a twenty to twenty-five-mile wind, and is generally used for light machinery, such as a small feed grinder, sheller, horse cutter, churn, washing machine, and other light power of that nature. The 26-foot mill being much more powerful, will do the same work in higher winds, besides doing much heavier work in high winds.

**Caution in Selecting Power Windmills.**

The great objection to wind power has always been the inability to do a mill large enough to do a portion of the work, half or two-thirds of the time.

Our smallest geared power windmills have a 13-foot wheel. This mill will create a great deal of power in heavy winds of ten to fifty miles per hour. But it is so seldom fifty-mile winds occur that it is much better to select a mill large enough to do its work in moderate winds, of fifteen to twenty-five miles, than to be waiting for high winds in order to do a horse power work with only a six power machine.

Some object to large mills on account of the danger from wind storms. This however is found only with stiff wheel mills, which we consider 13 foot wheels as large as ought to be made in that style. We construct our steel mills to 25 feet, being the largest size of wheels. But this is not the case with Vaneless Mills—our steel mills of that nature is just as safe as one of 13-foot. They are the only style of wheels we advertise in sizes larger than 13 feet. These mills are not only safe in storms but are not as hard on the towers or on a building as mills with tall vanes. The vaneless can not double their mills together as it would a mill with vanes. They stand when no other style would.

**Edison General File Series**  
**1911. Battery, Storage - Delivery Wagons - General (E-11-11)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery and its use in lightweight electric delivery wagons. Included is a draft letter from Edison to *The Carriage and Wagon Builder*, dated November 25, 1911, summarizing his work, as well as references to other articles by or about Edison. There are also letters, some with draft replies in the form of marginalia, pertaining to endurance tests and to Edison's control of the Lansden Co., a manufacturer of electric wagons. Other documents include an expense statement detailing experimental work conducted during the period August 1910-March 1911 and a drawing of a wood block wheel, probably by Edison, dated November 6, 1911. Among the correspondents are W. M. Barrett, president of the Adams Express Co.; phonograph dealer C. B. Haynes; longtime Edison friend and associate Cornelius E. Nestor; and W. Lanier Washington, whose grandfather had been a student of Samuel F. B. Morse.

Approximately 60 percent of the documents have been selected. The documents not selected relate to the procurement of supplies and other routine matters.



Specimen of My Work  
Erected to Mr. Vernon Cemetery

# Philadelphia Granite and Marble Works

M. HERB, Proprietor

Bell Phone

DESIGNER AND CONSTRUCTOR OF  
ARTISTIC MEMORIALS

Cemetery Lots Enclosed

WYOMING AVENUE AND SECOND STREET PIKE  
PHILADELPHIA

Branch Yard:  
Entrance of Northwood Cemetery

JAN 3 - 1911  
Jan 1/6/11

1/2 1911

Mr. Edison  
Sir: - I understand you are bidding  
a 2 ton truck for \$500.00 & if such is the  
case I would like you to let me have  
full particulars regarding same as I  
intend to get one in the near future &  
will readily understand the truck we use for  
hauling Memorials is a very plain affair  
there is no stone dealer in Philadelphia  
that uses an electric or gasoline truck and if  
possible I will be the first to run one  
I was first to install the air Power Machines  
& the others followed suit the result speak no doubt will be heard  
hoping to hear from you soon  
I am

All not building  
2 ton trucks but only  
electric cable cars  
equivalent to a horse  
power electric

Yours truly  
M. Herb

9

# Winston Vehicle Company

**Manufacturers**

Business Wagons a Specialty

*Ans 1/10/11*

Winston-Salem, N. C., Jan'y 6-11

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

We have been interested in the development of your storage battery and notice some extracts from an article from you which appeared in "Carriage and Wagon Builder", in which you indicate that your "Nickel-Iron storage battery" has been completed and we infer is now a commercial proposition. We also note that the results from your experiments with it on an ordinary one horse delivery wagon have proven satisfactory. We shall greatly appreciate it if you can spare the time to give us further data about it.

We should like to know if the equipment can be bought of you, viz, the Electric motors, the Controllers and the storage batteries or what the plan for distribution will be.

Could we now buy the out-fit from you to test it on a wagon and at what cost. We build horse drawn delivery wagons and Trucks ranging in capacity from 800# to 5000# and up.

We notice your plan includes a smaller size wagon, which can be sold for considerably less than the prices you mention of \$600. to \$700. for ordinary city delivery.

Could you give us the approximate weight of the equipment, space required &c. We further note that the storage battery will last as long as the Vehicle and we suppose generates the current or do they have to be recharged from a station like

*Please read the article  
was completely new  
we just ordered 3 new  
development of  
by patent application*

*Members of the  
1 Horse*

BEST QUALITY



Winston Vehicle Company  
**W**anufacturers  
Business Wagons a Specialty

Winston-Salem, N. C.,

Mr. Thos A. Edison #2.

the present electrically driven cars?. We know your time is very valuable, but we shall very much appreciate any data that you may be able to spare the time to give us,

With a high appreciation of your wonderful achievements, we are,

Cordially yours,

HR/R.

Winston Vehicle Co.

We enclose self addressed envelope for your convenience.



B  
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Battery - Wagons

W. V. SMITH, PRESIDENT

J. W. NEIL, TREASURER

# Smith & Neil Company

MANUFACTURERS OF

CARRIAGES, WAGONS, CARTS, DRAYS, ETC.

JOBBERS OF CARRIAGE AND WAGON MATERIAL

ALL KINDS OF REPAIRING PROMPTLY DONE

VEHICLE RUBBER TIRES SOLD AND APPLIED

112-116 CEDAR STREET

Jacksonville, Florida,

*Rec'd via  
Jan 23 1911  
G.M.*

*Teany  
with the vehicle  
when finished  
we'll give you  
information*

Mr. Thomas A. Edison,  
Orangeburg, New Jersey.

Dear Sir:

We note in the Christmas edition of the Carriage  
Monthly your article on Nickel Batteries and motow to appl  
to wagons. Any additional information you could give us would  
be highly appreciated.

Very truly yours,

SMITH & NEIL CO.,

*W. V. Smith*

SB-  
Handwriting

Write <sup>Write 7/27/11</sup> <sup>Quillsign</sup>

Hoane who is

a blackheader  
of SBCo. - okay

I want to remind you  
that your firm has  
4 Electrics & do not  
use the Edison Battery  
Whereas ~~the~~ <sup>many</sup> the big  
Dept Stores are using  
them & Hoane has  
discarded the lead battery  
for ones — Edison

Biz -

How many Electric  
has Sloan & Co New York  
Carpet people - Have  
they any of deer  
batteries

Edson

Mr. Bee  
675  
345  
30  
1018  
Sloans have four 3/4 ton  
g.v. trucks

Rees  
675  
345  
30  
1018  
Mr. Edson & Knicker  
No Edson Batteries

Rees

For S-  
wagon

*file*

ANALYSIS OF ORDER #25643 (8-23-10)  
EXPERIMENTAL WORK ON ELECTRIC DELIVERY WAGON

*upt.* MARCH 31ST, 1911.

|                            | <u>1910</u> |                                | <u>LABOR</u>      | <u>MATERIAL</u> |
|----------------------------|-------------|--------------------------------|-------------------|-----------------|
| T.A.E.                     | 8/26        | Laboratory Pay Roll for August | \$26.63           |                 |
| Studebaker Bros.           | 9/19        | 1 - #8952 Sprocket             |                   | \$4.80          |
| McDougall & Potter         | 9/28        | 1 Axle and Forge               |                   | 30.25           |
| E. Jones & Co.             | 9/27        | 2b Special Spokes              |                   | 7.50            |
| Universal C.Fdy. Co.       | 9/16        | 25 lbs. Castings               |                   | 1.00            |
| Diamond Chain & Mfg. Co.   | 9/12        | 1 - 3/8 x 70" Chain            |                   | 3.61            |
| United Copper B&M Co.      | 9/17        | 5 Castings                     |                   | 1.04            |
| Ed. S. B. Co.              | 9/30        | Pay Roll                       | 78.15             |                 |
| T.A.E.                     | 9/30        | 1 - Keystone Vehicle Co. Wagon |                   | 108.50          |
|                            |             | #518 and freight               |                   | 5.32            |
|                            |             | Sundry Small Supplies          |                   |                 |
|                            |             | Pay Roll                       | 101.13            |                 |
| Jas. A. Coe & Co.          | 11/18       | 1 Bar - 3 Channels             |                   | 1.70            |
| Universal C. & Fdy. Co.    | 10/6        | 19 lbs. Castings               |                   | .76             |
| T. A. E.                   | 10/31       | Sundry Small Parts             |                   | 8.47            |
|                            |             | 1 Brake for Wagon #518         |                   | 3.50            |
|                            |             | Pay Roll                       | 371.46            |                 |
| Ed. S. B. Co.              | 10/31       | " "                            | 27.90             |                 |
| T. A. E.                   | 11/30       | Sundry Small Parts             | 467.88            | 7.25            |
|                            |             | Pay Roll                       | 9.68              |                 |
| Ed. S. B. Co.              | 11/30       |                                |                   |                 |
| Gleason Works              | 11/2        | 2 Steel Sprockets              |                   | 37.00           |
| Lansden Co.                | 11/3        | 1 #25 B. Controller            |                   | 24.50           |
| Chris. Musler              | 11/10       | 1/2 Set 1 1/2" Rubber )        |                   |                 |
|                            |             | 1/2 " Channels )               |                   | 41.00           |
|                            |             | Repairing Brakes )             |                   |                 |
| T. A. E.                   | 12/31       | Pay Roll                       | 119.52            |                 |
|                            |             | Sundry Small Parts             |                   | .57             |
| Jeffrey Mfg. Co.           | 12/1        | Chain and Sprockets            |                   | 3.19            |
|                            |             |                                |                   |                 |
|                            | <u>1911</u> |                                |                   |                 |
| Universal C. & Fdy. Co.    | 1/24        | 30 lbs. Castings               |                   | 1.20            |
| Dilworth, Towne & L.       | 1/11        | Cut Steel                      |                   | 92.85           |
| Jas. A. Coe & Co.          | 1/11        | Bar Steel                      |                   | 4.34            |
| T. A. E.                   | 1/31        | Sundry Small Parts             |                   | 6.85            |
|                            |             | Pay Roll                       | 460.15            |                 |
| E. P. Works                | 2/28        | 1 Sectional Punch and Die      |                   | 39.77           |
|                            |             | Copper - plating 8 nuts        |                   | .07             |
| T. A. E.                   | 2/28        | Sundry Small Parts             |                   | 6.10            |
|                            |             | Pay Roll                       | 408.24            |                 |
| Hammacher, Schlemmer & Co. | 3/8         | 1 B. & S. Gear Cutter          |                   | 2.07            |
|                            |             | Carrie Forward                 |                   | 443.20          |
|                            |             |                                | <u>\$2,070.69</u> |                 |

ORDER #25543

|                        |      | <u>LABOR</u>                                                                        |        | <u>MATERIAL</u> |       |
|------------------------|------|-------------------------------------------------------------------------------------|--------|-----------------|-------|
|                        |      | 2,070.69                                                                            |        | 443.20          |       |
| Brought Forward        |      |                                                                                     |        |                 |       |
| Universal C.&Fdy.Co.   | 2/16 | 61 lbs. Castings                                                                    |        |                 | 2.44  |
| United Copper B&M Co.  | 2/4  | 11 1/4 lbs. "                                                                       |        |                 | 2.70  |
| A.O.Schoenmaker & Co.  | 2/23 | 5 lbs. Amber Mica; 9 7/8                                                            |        |                 |       |
|                        |      | lbs. Mica Plate                                                                     |        |                 | 20.88 |
| Diamond Chain & M. Co. | 2/20 | 2 Chains                                                                            |        |                 | 6.83  |
| Baylis Co.             | 2/21 | 10 Reaction Brush Holders                                                           |        |                 | 8.02  |
| Cameron EL. Mfg. Co.   | 2/1  | 44 1/2 lbs. Conctr. Bars                                                            |        |                 | 16.57 |
| E. S. B. Co.           | 2/28 | Pay Roll                                                                            | 20.81  |                 |       |
| T. A. E.               | 2/21 | " "                                                                                 | 419.58 |                 |       |
|                        |      | Sundry Small Parts                                                                  |        |                 | 11.19 |
| E. S. B. Co.           | 2/31 | Pay Roll                                                                            | 2.45   |                 |       |
| E. P. Works            | 2/31 | 1 Set Armature & Field )<br>Punchings for Auto Motor )<br>1 Set Dies and Punch do ) |        |                 | 7.80  |
| C. A. Goldsmith        | 3/3  | 5 1/4 lbs. Compo. Castings                                                          |        |                 | 1.31  |
| W. J. Goldsmith        | 3/23 | 12" Le Carbene" Brushes                                                             |        |                 | 7.68  |
| Morrison Fdy. Co.      | 3/27 | 25 lbs. Castings                                                                    |        |                 | .92   |
| A.O.Schoenmaker        | 2/20 | 5 Grs. yds. Oiled Muslin Tape                                                       |        |                 | 2.40  |
| Jgs. Goldmark Co.      | 3/11 | 26 lbs. Magnet Wire                                                                 |        |                 | 5.52  |
| W. J. Goldsmith        | 3/23 | 1 Odemeter                                                                          |        |                 | 6.00  |

\$ 2,513.53 544.36

Total to April 1st 1911 - \$ 3,057.89

MEMORANDUM REGARDING CHANGES ON MOTOR FOR DELIVERY WAGON.

1. Increase outside diameter of the field to  $12\frac{1}{2}$ ".
2. Increase length of pole so it will take copper strip 1" wide.
3. Recess inside diameter of field punchings so that coils will lay flat without bending, and leave plenty of clearance over the pole face.
4. Re-inforce frame arms with ribs and shift position of poles and frame arms to 45 degrees.
5. Use heavier and shorter bolts for securing front bracket to frame.
6. Drill and tap re-inforcing ribs to receive cap screws.
7. Allow  $5/8$ " more room for the back of armature winding.
8. Shift oil pocket so that it will not interfere with armature winding.
9. Arrange a brush yoke so that it can be shifted accurately and firmly secured.
10. Bring brush leads out through lower side of front cap and arrange firm support or clamp, to prevent vibration.
11. Make the arms of front bearing narrower.
12. Cut back the flange on front cap, so as to make brushes more accessible.
13. Arrange front cap so that thin sheet iron covers may be used to enclose commutator.
14. Arrange feet on back of frame and front end cap for supporting motor.
15. Make the end of back bearing housing square, so that plain disc oil cover can be used.
16. Use present armature disc; but lighten with holes near center.
17. Arrange bearing housings with grease box on top.
18. Reduce weight of castings wherever possible without decreasing strength of necessary part.
19. Arrange commutator ~~same~~ length <sup>4" longer</sup> ~~same~~ diameter as at present; <sup>same  $7\frac{1}{8}$ " over all</sup> but extend commutator lugs half inch.
20. Decide on proper size of brush holders and brush holder studs.
21. Armature slots, field, poles, air gap and length of armature ~~field~~ <sup>field</sup> to be the same as the present motor.

April 25, 1911.

J.M.B.

E. B. Wagon  
C. E. NESTOR, PRESIDENT

ED. H. STODDARD, MANAGER

H. W. SMITH, SECRETARY

# EDISON BATTERIES NESTOR ELECTRIC VEHICLE CO. EDISON BATTERIES

LANSDEN WAGONS AND TRUCKS  
BAILEY VICTORIA PHAETONS  
BEACH RAILWAY CARS

Personal

137 HAYES STREET

*Ans 6/15/11*

SAN FRANCISCO, CAL. May 27, 1911.

Mr. H. F. Miller,  
Mr. W. G. Bee,  
Edison Storage Battery Co.,  
Orange, N. J.

*Nestor & I have taken over the  
Lansden. We will furnish you  
good chassis at a low price &  
I have no objection to your handling  
any truck or building any  
truck you desire if you use  
our battery which I know  
you will - S*

Dear Friends:

Knowing that you both are personal friends of ours and more or less interested in our California companies, I take the liberty of asking you, at this time, for some advice.

We consider ourselves as authorized representatives of the Edison Storage Battery Co. and are doing our utmost at all times to promote the good of the cause, as you know.

In the matter of the recent action taken regarding the Lansden Company, you can see the complications that will necessarily arise inasmuch as we have a matter up at the present time regarding the building of a number of five ton trucks, and what I should like to know is what attitude the Edison Company will take if we should handle any other make of wagon than that of the Lansden Company. And also, at this time, would it be possible for the Lansden Company to give us the shop rights, etc. in order that we may build these wagons on the Coast?

*Mr Edison  
What shall we tell him?  
of GM*

Prospects here are looking good for a lot of business which will certainly come to us within the near future.

Thanking you for your consideration and advice in this matter, I

am

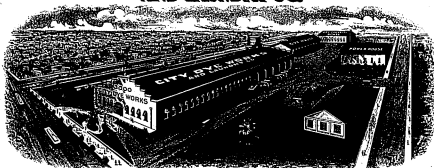
Yours very truly,

J. B. Wagon

J. J. JENKINS PRES. & MANAGER

## CITY DYE WORKS AND LAUNDRY CO.

PHONES SUNSET SOUTH 120  
HOME 10551



3000 CENTRAL AVE.

Los Angeles, Cal., June 19, 1911.

Thomas A. Edison,  
Orange,  
New Jersey.

Dear Sir:-

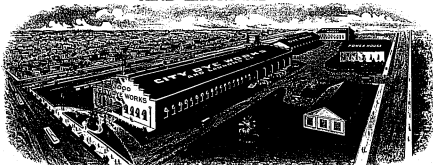
I have been waiting patiently for the solution to the light delivery car problem. If you will notice by the very poorly taken photo enclosed that in my business we use a number of auto delivery cars.

We have at the present time thirty-one cars in service, including thirteen different makes. Our gross load, including drivers, average less than 1,000 lbs. The daily mileage for each car averages thirty miles. The average Upkeep cost per month per car for the year 1910, including labor and material was \$40.48 per month; the average gasoline consumption per car per month for the year 1910 was sixty-one gallons. This does not mean that these cars were running every working day, we average five cars in the shop for repairs all the time. I have a very accurate Upkeep record for the past two years and would be pleased to give you an accurate actual statement, giving in detail the amount of service we get out of gasoline driven cars, the cost of Upkeep, etc., should you be interested in such a record.

Now for my object in thus addressing you. I have been endeavoring to discover an electric vehicle built suitable for the requirements of my line of business and similar lines that require quick, easily handled motor delivery wagons built for light loads, yet substantial enough to stand the racking that they must get owing to their cum-



## CITY DYE WORKS AND LAUNDRY CO.



3000 CENTRAL AVE.

LOS ANGELES, CAL.

#2.

bersome bodies swaying and bouncing over rough roads. So far I have been unable to find anything on the market under \$2,500. They tell me that your new battery is no better than the old Exide battery, except as to maintenance cost, that it costs more than the old battery and does not give any more mileage. Also that the cost of a set of your batteries in a light delivery wagon would be about \$550.

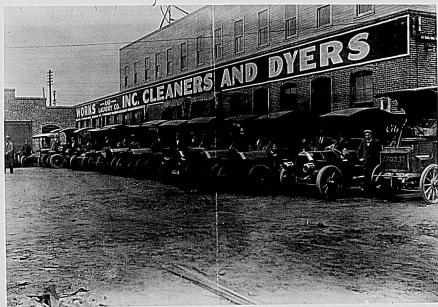
I am writing you for authoritative information on the subject. Is it not possible to construct an electric delivery wagon for the purpose outlined above that can be sold for \$1,000? If so, there is a field in this city of Los Angeles for at least 300 of them and I personally would be very much interested in such a wagon.

With apologies for taking up so much of your valuable time and my sincere gratitude for any information you may give me, I am

Yours respectfully,

J. J. J./M.E.

[ATTACHMENT/ENCLOSURE]



35-~~Wagons~~  
trucks

The Adams Express Company,  
Office of the President,  
New York,

June 22, 1911.

Harry Hiller  
Baehman  
Harry Estlin

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Mr. Edison:

I am without advice from you as to the cost of the two-ton trucks. For your information, matters are progressing and I think in a short time we will be able to give you definite information.

Yours truly,

Wm. A. Hiller  
President.

43 wagons

ADDRESS ALL COMMUNICATIONS TO THE COMPANY OR PRESIDENT, P.O. BOX 290 NEW YORK, N.Y.

CABLE ADDRESS: TEAPLANT, NEW YORK.

TELEPHONE 200 JERSEY.



*Meadcroft*  
*Let's go & show them how other keep accounts of full information*  
 June 24th, 1911. 9

WHEN REPLYING TO THIS LETTER MENTION DATE AND DEPARTMENT

B/W

Mr. Thomas A. Edison,

Orange, N. J.

JUN 26 1911

Dear Sir:-

There are so many different conditions in our delivery system in different parts of the country that it would be impossible for us to give you figures that would be representative of the cost of delivery service. We decided, therefore, to tell you in a general way what we do in Brooklyn:- We stable over there forty horses and figure that it costs us \$2.43 for each day's work that we receive. Included in this cost is the interest on our investment, depreciation at 33 1/3% a year on the stock and 25% on wagons and harness, cost of feed, horse shoeing, repairs, rental, water taxes, and every conceivable charge. We have no records at all to show the number of deliveries made each day nor have we any record of the average number of miles made. We pay \$140. each for our wagons, \$25.00 for each set of harness, and \$225.00 for the horse.

Trusting that this will give you the information desired, we remain,

Yours truly,

THE GREAT ATLANTIC & PACIFIC TEA CO.,

Per *[Signature]*

ESB. Trucks

W. M. Barrett,  
Adams Express Co;  
59 Broadway,  
N.Y.

Expect to have estimate on ~~two~~ ten truck tomorrow.

Thomas A. Edison

June 28, 1911

15-5 - Wagons  
E. I. TOWNSEND

Telephone Connection

C. G. TOWNSEND

# TOWNSEND BROS.

## DEPARTMENT STORES

Broadway and Hudson Ave.

Townsend Building



TOWNSEND.

NYACK, N. Y.

191

*July 2nd*  
 Thomas I have a wagon  
 Says out on daily basis  
 Dear you will have another  
 in a week = well n't sell  
 any until they have  
 at least 5000 units each  
 at your "at least 5000 units each"  
 full particulars regarding  
 your "latest invention"  
 Electric motor to be attached to  
 delivery wagons for the  
 purpose of propelling the  
 same.

We are interested.

Because "if satisfactory" and  
 not too expensive to install, and  
 operate - Desire to attach  
 them to our <sup>delivery</sup> wagons.

Also please let us know  
the cost of these motors -  
Also when and where  
they can be seen in operation  
in N. Y. City or Orange N. J.  
And early reply will greatly  
oblige.

Townsend Brooks

Phone, Madison 6227.



Wholesale  
Electric Flash Lights  
and Batteries.  
Postal Cards.

# C. B. Haynes & Co.,

— WHOLESALE AND RETAIL —

## Edison Phonographs and Records and All Supplies. P. O. Box 801.

REMOVED TO  
121 W. BROAD ST. No. 5 North Seventh Street.  
RICHMOND, VA. Oct. 17th, 1911.

*Ans 10/18*

Mr. Thos. A. Edison  
Orange, N. J.  
Dear Mr. Edison :-

I have been talking up this delivery wagon, and have two or three of them sold. We want a demonstrating wagon, soon as we can get it, and I prefer to have the one that the box sets lower than the first one you made. Can you give me the exact date or any where near it, we can expect this demonstrating wagon. I am confident we could sell a number of them if we had something to show.

Can sell one to a very prominent house here but would have to have a specially made top for it. If you can give me any information on this subject will you please do so and oblige,

Yours very truly,  
C. B. Haynes.

*The 2nd wagon is now being tested over all embankments, runs well do nothing until the run is finished, possibly will show up well ahead of the 1st one. I have some defects in the 1st one, some of the boxes are not as good as the first one you made. I am confident we could sell a number of them if we had something to show.*



W. LANIER WASHINGTON  
NEW YORK  
120 West 57th St.

Nov. 3, 1911.

Thomas A. Edison Esq.  
Orange, N. J.

My dear Mr. Edison:-

*Manuscript  
has not yet been written  
we are ready*

I want to thank you again for your very courteous and considerate treatment yesterday afternoon at the time of my visit to your laboratories, which was made most interesting to me.

I am writing also to remind you of your promise to keep me in mind when the Delivery Wagon that you are now testing is ready to be placed on the market. I believe I can handle that proposition to advantage in New York and vicinity.

I mentioned to you in the course of our conversation that my grandfather, Lewis W. Washington of Virginia, was a student at Princeton under Prof. S. F. B. Morse, and did much of the mechanical work for him in making the first telegraph instruments, and that he had written a description of it for some institution in Paris, which I believe you mentioned the name of to me. I do not recall it exactly, and am imposing upon you to ask that you will repeat it to me.

Again thanking you, and with kind regards and wishes for continued success in your valuable efforts, I am

Yours faithfully.

*École polytechnique Paris*  
*W. Lanier Washington*

Nov. 6th, 1911

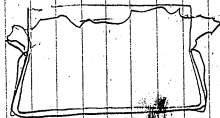
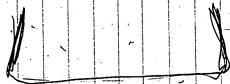
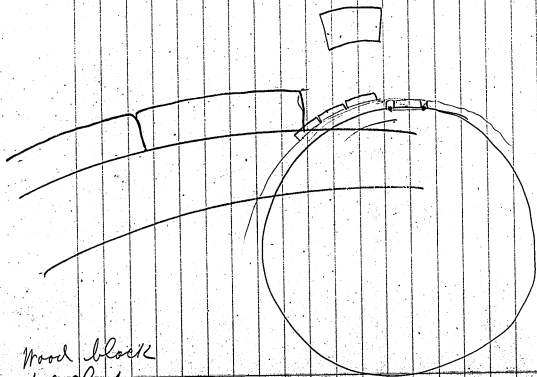
Mr. W. Lanier Washington,  
120 West 57th Street,  
New York City.

Dear Mr. Washington:-

Replying to your favor of the 2nd inst., I beg to say that your name has been placed on my file and it will give me pleasure to notify you when I am ready with the electric delivery wagon.

The institution in Paris that I referred to in our talk the other day is the Ecole Polytechnique.

Yours very truly,



Wood block  
to hold for  
light delivery

$\frac{1}{2}$   
 $\frac{1}{2}$   
 $\frac{1}{2}$

$\frac{1}{2}$   
 $\frac{1}{2}$   
 $\frac{1}{2}$

Nov. 6, 1911

B.S. Wagons

# The Adams Express Company

Office of the President

No. 71 Broadway,

(New York)

November 8, 1911.

*Ans 11/11/11*

My dear Mr. B. - Letter had

Mr. Thomas A. Edison,

West Orange, N. J. *no reference to Adams Express*

My dear Mr. Edison: *to present with business methods*

Your letter addressed to me, dated October 18th, was

handed to me by Mr. Doty on November 2nd. *where our cannot do business*

*without b.r. being and*

As I did not under-

stand whether your reference therein was intended to specific-

ally apply to our Company, I made inquiry and find that there

has been no contention on the part of the Laneden Com-

pany about prices, and therefore I assume that your reference

was intended to apply generally and not specifically.

I do want to say in this connection that I have been

very anxious to substitute electric wagons for our present

equipment at Newark, but I have necessarily deferred doing so

until I could learn definitely what the Pennsylvania Railroad

proposes to do about its passenger station. If certain changes

are made our Company's warehouse will have to be torn down

and then we must get another location. The determination of

*J. W. D. sign*

- 2 -

that question is the only reason why I have suspended the order for trucks. It is my purpose, if we change our warehouse, to consolidate in one building the warehouse and garage, which arrangement should prove both convenient and economical.

Yours very truly,

  
President.

Nov. 16th, 1911

*Dick*  
Mr. T. A. Edison:-

Below you will find record of dates of delivery to Mr. Nicolai of various details which were used in rebuilding delivery wagon, and also herewith are tracings showing the completeness of each, and signed receipts for same.

On November 3rd prints showing details of new sprockets, together with jack shaft brake ties, were delivered.

On November 4th fully dimension sketch was delivered, giving him all information to make up new frame. This frame was made riveted together and because of defective workmanship had to be taken apart, new side frames bent up and cross ties re-riveted.

November 4th blue print of angle iron frame cap for carrying king pin was delivered, and casting received on the 6th.

Assembly drawing of the frame, together with king pin block and new shock absorber for rear axle, was delivered on November 7th. Assembly layout showing detail construction of this shock absorber, together with all necessary parts used in connection therewith, were delivered November 7th.

Tracing for attachment to present brake bracket for holding the shock absorbing device in position was delivered on the same date, and because of the absence of a blacksmith Mr. Nicolai thought it necessary to machine out of a solid block of steel the supporting plate shown on appended tracing. The directions for making up this piece as a forging were not followed.

Details of the king pin were delivered on November 8th.

There has been no delay in rushing through the blue prints necessary for building the wagon. Those details which have been held until other details and tracings were finished were in connection with the steering arm. These parts were intended to be attached to the wagon when they were completed, as it was the intention to use the present steering arm and connections for the early test of the wagon. The construction of this strengthened steering outfit was arranged so that the same might be easily attached to the wagon without delaying the test.

TIA.B.

(2)

The forgings for stud axles were somewhat delayed and prints for these parts were delivered on November 11th, on which day the parts were received.

The only real delay that might be placed against the Drawing Room was in the bushing for front wheels. No report was made regarding excessive wear on ends of these parts and face of knuckle, consequently no provision had been made to overcome same. It was later decided to add ring on casting, and this part of the work has been rushed as far as the Drawing Room is concerned.

ALS/ES

U.S. Wagons

For Carriage + Wagon Builder

Nov 25

ELECTRIC DELIVERY WAGONS

In the December, 1910 issue of the Carriage and Wagon Builder I mentioned the fact that I was developing for the use of grocers, butchers and other tradesmen a light electric delivery wagon, to be operated with a special type of my nickel-iron storage battery. The first of these experimental wagons, as described in that article, was a standard one-horse delivery wagon which I had bought in the open market and changed over to an electrically driven vehicle, and which at that time had been put on a running test on the roads at Orange.

This wagon has been running continuously ever since, until about a month ago. My object was to run it on a breakdown test in order to develop any weaknesses that might exist; and for this purpose I selected a circular route of about 16 miles. This route covered a great many rough places, including unopened streets and poor roads. Some other streets were paved with cobble stones and Belgian blocks in bad condition, and consequently were full of ruts and bumps.

My instructions were to use two shifts of men and run over this route day and night at full speed, with 50 per cent overload on the wagon. The rear wheels had solid rubber buggy tires, but the front wheels had only the usual steel tires. Thus there was nothing to save concussion on the front part of the chassis. I fully expected that there would be a number of breakdowns, and that the wagon would have to be towed in occasionally. These expectations were fulfilled, but not



(2)

to the extent that was expected. <sup>All breaks were traced to the steel tires</sup> There was no total breakdown at any time, and up to the time when I had its operation stopped, the vehicle had made 4000 miles.

From the experience gained in running this No. 1 experimental wagon I built another one, No. 2, in which the weaknesses of the first vehicle were eliminated and several improvements were added, including a different motor. One of the weak parts of wagon No. 1 lay in the inadequacy of the motor, which was the best for the purpose that I could buy on the market. In order to overcome this trouble I had a special type of motor designed and built at my Laboratory. It is strong enough to run a wagon two or three times as large and is very substantial in its construction. This later wagon No. 2 was completed and put on a similar breakdown test with 50% overload about two months ago over the same route, under practically the same conditions as the earlier one. The only difference is that this vehicle is operated by three instead of two shifts of men, and is run day and night, making about 125 miles per day.

Wagon No. 2 is a marked improvement over the first one. It is of far more rugged construction, mechanically and electrically, and runs at a higher speed with great economy. Thus far it has run 1400 miles under rigid scrutiny, and the weaknesses developed have been carefully noted and remedied. I intend to have this car run over the route mentioned all through the winter in all sorts of weather. The experience thus gained will enable me to construct No. 3.

(3)

in which all previous defects will be eliminated, and which I feel sure will be the model of a light electric delivery wagon that will be satisfactory for general use, *and not have a depreciation according to %.*

It may be of interest to add that last spring I took No. 1 off the regular route, and allowed one of our local tradesmen to use it for a few days for his usual deliveries, which were accomplished satisfactorily in <sup>very considerably</sup> ~~a~~ less time than was usual with his regular horse-wagon delivery.

Throughout all the several tests that I have mentioned above, the one part of the equipment that has given no trouble is my storage battery. Notwithstanding the tremendous strain to which it has been subjected, there have been no delays or breakdowns from any failure of the battery to do its part. Hence, I feel no hesitation in assuming that when my experiments on the vehicle are completed I shall have a wagon capable of use in the hands of the ordinary tradesman, and needing no expert assistance.

Nov 25, 1911

Battery Genl

Dec. 5, 1911.

Mr. H. M. Miller:

Please cancel, at once, F. S. B. Co. order #25643 covering work on light delivery wagon. Mr. Edison has instructed us that this expense is to be borne by him personally, and as soon as possible, charges already received by us covering this order will be assembled in the form of a bill and charged back to him.

TJL/ER

J. W. LEONARD.

Copies to Messrs. Bachman, Gould and Walsh.

Harry - Can you make up the  
2nd bill. Charges still coming through  
in Feb. will be placed forward to you  
date. It will be ready for you to  
record several bills, unless you can direct  
this

"M.M." J.J.  
additionally return to M.M. J.J.

✓✓✓✓  
Bullock

Dec 20-11

Mr. Butler  
Please file at  
Lab in Law  
office

Bachman

[ATTACHMENT/ENCLOSURE]

JAMES A. HEARN & SON.  
8, 10, 12, 14, 20, 22, 24, 26 & 30 West Fourteenth St.  
57, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27 & 29 West Thirtieth St.  
CABLE ADDRESS: JAEKAS-SONSON, PORTJULIUS-NEWYORK.

*Bachman & Muller*

*New York*, November 25, 1911.

DEC 1 - 1911

*find out what it will cost to put these  
Chains in good order (to) new counterweights.  
Re-wire - what front - etc  
see letters = 9*

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Replying to your letter of November 23<sup>rd</sup> would say that while I was invited alone to the meeting at your office and there were present three of your representatives and yourself, yet I must repeat that my memory has been considered a very accurate one and that I made full notes of the agreement on reaching the Orange station. While it was an agreement prejudicial to the money interests of James A. Hearn & Son in that they have a claim for actual damages suffered far larger than the cost of what you agreed to do, they will live up to it and expect no less of you.

During the almost total tie-up of our business in the holiday season of 1910 when seven or eight of our City vehicles and our two Orange-Montclair and Newark vehicles were being towed in every business day running 22, 25 and 27 miles with batteries listed to do 85 miles, I complained daily to the Lansden Company (and many times directly to the Edison Battery Company) without receiving assistance.

Your batteries at that time were unprotected and no one from the battery company nor from the Lansden Company (although knowing of your trouble and constantly investigating) suggested that they be protected. Your batteries at that time were put up in wooden trays, fastened with nails driven from underneath, the points of which rested on the metal cells. It was found that part of the current of the battery was actually being taken in the wooden trays through these nails, the trays being sufficiently charged to give a reading on the meter.

For two weeks a representative of the Lansden Company rode on our Orange-Montclair electric car to see where and what the troubles were, every single day of which the car was towed in giving 25 to 28 miles on an 85 mile battery. We are informed that this type of vehicle had been originally tested and approved at the Edison Battery Company's works.

Your Lansden Company sold us in the Summer of 1910, fifteen chassis and two heavy trucks, probably the most inefficient, improperly constructed vehicles being operated in this vicinity today. You yourself told me that the copper leads from battery to motor were only one-sixth of what they should be to get benefit of battery's power. You say nothing of your promise to make good on this point, though you surely have not forgotten.

Your offer was obviously made as a small restitution in settlement of the damage James A. Hearn & Son sustained and further to protect the name and reputation of your Companies, and being so made was accepted.

[ATTACHMENT/ENCLOSURE]

JAMES A. HEARN & SON.  
3, 10, 12, 18, 20, 22, 24, 26 & 30 West Fourteenth St.  
5, 7, 9, 11, 13, 15, 17, 19, 21, 23, 25, 27 & 29 West Thirtieth St.  
CABLE ADDRESS: HEARN&S-LONDON, PORTUGALIA-NEWYORK.

*New York.*

Mr. Thomas A. Edison, -2-

Your own people admitted that the trucks were so inefficient and badly constructed that the Lanaden Company ought to have taken them back at the start and refunded the purchase price. James A. Hearn & Son not only paid for something which they did not receive and which was sold on representations that proved baseless but have daily since then suffered damages for which there is no reparation except such alterations as you suggested and the writer accepted, or else a formal presentation of claim for the entire sum involved.

It is submitted that the plan you first suggested and which I accepted as outlined in my letter of November 22nd is both the easiest and least costly for you, and in view of the long relations existing between your company and ours and the fact that your company's reputation is at stake in the matter, is the fairest, quickest and best settlement.

Yours very truly,

*H. Prescott Beach*

P.S.- To the recent communication from the Lanaden Company endeavoring to "take back" its agreement made over three months ago to re-wire, reconstruct and alter truck number 151 without charge, to correspond with truck number 150 when and if truck number 150 proved sufficiently efficient to be acceptable to James A. Hearn & Son\* it is unnecessary to reply. This subject is a good deal larger one than the Lanaden Company evidently appreciates and likely to be much more far reaching financially and otherwise.

Filed: D Electric Delivery  
(1911?) Wagon

## Electric Delivery Wagon.

Endurance tests are now being run on a new small electric delivery wagon, to take the place of the usual one-horse delivery wagon, ~~for~~ for which there will probably be a ~~great~~ demand.

The first wagon was built last year & was run about 4000 miles, with overload, <sup>on</sup> the worst roads around Ouanga. From the information attained, No 2 wagon was built which is a very great improvement. This is now running night & day over the top roads, in 3 <sup>hours</sup>

2

Shifts This vehicle has run  
1200 miles - Each day it might it  
makes 100 to 125 miles with  
a double overload -

This running will continue  
until <sup>mile</sup> 10,000 or 20,000  
miles <sup>are</sup> covered, but before  
this mileage is attained  
No 3 <sup>will be made with</sup> all the improvements  
found <sup>suggested by</sup> the Experiments,  
will be made & it is believed  
that this vehicle will ~~be~~  
be perfectly satisfactory & will  
~~not~~ have a depreciation not  
higher than 8 per cent -  
At the present time the lowest  
price Electric delivery wagon  
is sold for \$2000. The new  
wagon will sell for ~~\$1500~~



around 1750<sup>00</sup> with 15 per cent off to the agent -

# I am fitting up a large works at Silver Lake, N.Y., to build these vehicles. This price makes the Electric wagon very attractive for the Rutland, Grocers etc <sup>because,</sup> ~~etc~~ because on account of the high price of horses, he can sell the horses from 3 wagons for \$800. & buy 2 Electric for \$1500 - & run them very much cheaper -

# What is particularly needed in connection with the selling of the vehicles is a place where they can be charged

4.

quickly & economically,  
Especially where the  
grocer has only one  
vehicle. Those employees  
several are warranted  
in putting in  
their econ<sup>charging</sup> outfit =

6.5 - Wagons

*Edison*

24 cell - M. V. Ironclad

|          |   |          |   |                 |   |            |
|----------|---|----------|---|-----------------|---|------------|
| 7 plates | - | 48 volts | - | 94 ampere hours | - | 4512 Watts |
| 9 "      | " | "        | " | 126 "           | " | 6048 "     |
| 11 "     | " | "        | " | 157 "           | " | 7536 "     |
| 13 "     | " | "        | " | 189 "           | " | 9072 "     |
| 15 "     | " | "        | " | 210 "           | " | 10080 "    |
| 17 "     | " | "        | " | 252 "           | " | 12096 "    |
| 19 "     | " | "        | " | 283 "           | " | 13584 "    |
| 21 "     | " | "        | " | 315 "           | " | 15120 "    |

*file lead bank*

Weight - 24 cells

|          |          |                    |               |
|----------|----------|--------------------|---------------|
| 7 plates | 546 lbs. | 8.24 Watts per lb. |               |
| 9 "      | 702 "    | 8.61 "             |               |
| 11 "     | 852 "    | 8.84 "             |               |
| 13 "     | 1008 "   | 9.00 "             | Without trays |
| 15 "     | 1176 "   | 8.50 "             |               |
| 17 "     | 1332 "   | 9.00 "             |               |
| 19 "     | 1482 "   | 9.00 "             |               |
| 21 "     | 1632 "   | 9.00 "             |               |

List Prices

| Element & Jars | Cell    | 24 Cells |
|----------------|---------|----------|
| 7 plates       | \$13.55 | \$325    |
| 9 "            | 17.45   | 418      |
| 11 "           | 22.00   | 528      |
| 13 "           | 25.95   | 622      |
| 15 "           | 29.85   | 716      |
| 17 "           | 33.85   | 812      |
| 19 "           | 37.85   | 908      |
| 21 "           | 40.95   | 982      |

A-6                    240 amperes                    11520 Watts  
 This requires 15 plate lead                    10080 " to equal it  
 Weight 40 A-6 780 lbs.  
 "                    15 plate 1176 " Without trays  
 15 plate lead, list \$716  
 A-6                    "                    800

Adds 396 lbs. to carriage and 1440 watt hours shy.  
 1 Watt carries 25 lbs. 1 mile - for extra weight requires  
 15-1/2 watt hours for the weight - this with 1440 less weight  
 clearly requires a 17 plate cell to get equal mileage.  
 List \$812 and then it would overload carriage and would not  
 give the mileage.

Part Trucks

*M. Edison*  
*Bm*

EDISON BATTERIES USED IN COMMERCIAL TRUCKS. *in Chicago*

|                         |    |             |    |     |            |
|-------------------------|----|-------------|----|-----|------------|
| Marshall Field Co.----- | 10 | trucks with | 60 | A-6 | cells each |
| " " " "                 | 1  | " " "       | 60 | A-8 | " "        |
| Carson Pirie Scott      | 7  | " " "       | 60 | A-6 | " "        |
| " " " "                 | 17 | " " "       | 60 | A-4 | " "        |
| Armour & Co.            | 2  | " " "       | 60 | A-6 | " "        |
| " " " "                 | 1  | " " "       | 72 | A-8 | " "        |
| Mandel Bros.            | 1  | " " "       | 60 | A-4 | " "        |
| " " " "                 | 1  | " " "       | 60 | A-6 | " "        |
| Commonwealth Edison     | 2  | " " "       | 44 | A-4 | " "        |
| " " " "                 | 1  | " " "       | 60 | A-8 | " "        |
| " " " "                 | 17 | " " "       | 60 | A-6 | " "        |
| Anderson Elec. Car Co.  | 1  | " " "       | 60 | A-4 | " "        |
| " " " " "               | 2  | " " "       | 60 | A-6 | " "        |
| Spaulding Co.,          | 2  | " " "       | 45 | A-6 | " "        |
| The Fair                | 2  | " " "       | 60 | A-6 | " "        |

**Edison General File Series**

**1911. Battery, Storage - Delivery Wagons - Endurance Tests (E-11-12)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery and its use in lightweight electric delivery wagons. The documents concern road tests made in the vicinity of Edison's laboratory, on a route of his choosing, during the period August-December 1911. Included are instructions for the tests prepared by Edison for his chief engineer, Donald M. Bliss, and an undated blueprint containing a map of the test course along with instructions to the drivers. Most of the documents were prepared by Bliss and Edison employee J. T. Chesler and provide test results for the vehicle known as "Wagon #2."

Approximately 20 percent of the documents have been selected. The material not selected consists of duplicate and variant versions of the data; some data from tests conducted during 1910; and an undated blueprint containing a map of the test course and instructions for drivers of the vehicle known as "Wagon #1."

1328 - Hand -

(1911:11)

Bless -

Regarding the Horse wagon No 2

I want it to run over normal streets at 14 miles per hour with a load of 500 lbs over & above the wagon complete just as it will be in practice to wit 16 # C's cells -

When you have it rightly geared & ready put it on the route selected by me. Chewler knows where it is -  
Want this route taken ~~the~~ One the Car tracks  
One side is to run between rails - no bumps or holes are to be avoided. But taken at full speed & in all

2: Bless

Case the worst parts of the road are always to be taken -

Please arrange for two reliable runners & have someone go out occasionally & watch cases of they carry out instructions as to taking the worst part of the road -  
Arrange the load by using soap boxes filled with junk iron & arrange the battery not as you have it now but in such a way that it can be easily & quickly

### 3 Bells

removed a freshly  
charged battery put  
in. Don't want to  
detain vehicle more  
than 10 minutes to  
make the change  
you perhaps better have  
3 sets of A's two of  
which are on charge  
always -

Should have bens break  
downs. The 2 men should  
average 210 to 225 miles  
daily -

After running a few days you  
can see what is going to  
be impracticable & you  
should order up all  
it & have the part or  
parts ready as

### 4 Bells

We can keep the wagon  
out = As Jackman  
is to build them -  
please keep him posted  
& where you are in doubt as  
to a change better consult  
together & decide -

I understand you are  
making new axles & wheels  
with knuckles nearer center  
& will get it all ready  
Should the present knuckles  
work perfectly satisfactory  
it may be that it would  
be better to stick to it  
as the wheels are stack  
pins & make ~~it~~ but if  
not satisfactory after  
a good run you can

5 Bless

Change - also you should go ahead ~~and get a set of wheels~~ & get a set of wheels with Timkins bearings & have them all ready for a trial -

also you should get Timkins for Malor & Jack & have them ready so that when you want to try it will not take 2 or 3 weeks just anticipate on this wagon to the limit & have things ready for when you need them

6 Bless -

You had better have a set of springs for front, perhaps single like autos would be better on front as it would lock body to axle better

Plates for Ford Oll - We shall use a lot of Monel metal plates for forming Veners, I think these  $\frac{1}{16}$  thick will be the ones we shall adopt. Whatever Oll & Arken together request on this plate but please have done, ~~it~~

Moore is to teach Workmen how to make Speaker diaphragms & when learned they go back



of Bliss  
to phone who -  
He also works out &  
teaches at Wuth's new  
how to make matrices for  
sinks -

You should take up with  
Weber the speaker parts,  
You are making 6 models  
they have been in shop over  
a month, one at least  
should be selected from  
those already in Moore's  
possession & turned over  
to Weber so he can  
go ahead & develop tool  
to make them with,

It is best to make no  
change whatsoever  
Moore is fully informed on the  
subject & ask Weber & Moore to

of Bliss  
& start ~~the~~ Weber straight  
on it =

Anderson is to furnish  
Weber the working drawings  
& Model of the Horn  
disk - This should be  
done as soon as possible  
so we get it out of  
Engineering Dept =

The Small hornless table  
machine, I understand  
will be done in 2 or  
3 days, necessary detail  
drawings for this should  
be got out & the model  
finished & all turned  
over to Weber =

The only casual factory  
part of this machine

9 Bliss

is the legs - I have asked Anderson to make attachments in some way a variety of legs so we can get the right design

Regarding the 50  $\frac{1}{4}$  tub filling machines & the other machines of which I signed an order today Anderson should put things through the same as he did with the ~~50~~ 50  $\frac{1}{4}$  mech. tub machines to wit getting bids outside & making certain parts at phone work & Lab

10 = Bliss

Smith will prepare drawings for the tubs, rigger & other machines that are necessary with the 50 loaders. Please help him out in the drawing thing.

Keep up experimenting with reactions. We must have something for the 1 Horse & 5 horse bottom.

I am giving instructions to the various experimenters & you will help them out as they want it.

Edson

[ATTACHMENT/ENCLOSURE]

Phov. - Manuf.

Aug. 1, 1911

Bliss:

Regarding the 1 Horse wagon No. 8.

I want to run over normal streets at 14 miles per hour with a load of 500 lbs. over and above the wagon complete, just as it will be in practice, to-wit: 16 C 8 cells.

When you have it rightly geared and ready put it on the route selected by me - Chessler knows where it is. Want this route taken. One (on) the car tracks one side is to run between rails - no bumps or holes are to be avoided, but taken at full speed and in all cases the worst parts of the road are always to be taken.

Please arrange for two reliable runners and have some one go out occasionally and watch and see if they carry out instructions as to taking the worst part of the road. Arrange the load by using soap boxes filled with junk iron and arrange the battery not as you have it now, but in such a way that it can be easily and quickly removed and a freshly charged battery put in. Don't want to detain vehicle more than 10 minutes to make the change. You perhaps better have 3 sets of A 8, two of which are on charge always.

Should there be no break downs the two men should average 210 to 225 miles daily.

After running a few days you can see what is going to be impracticable, and you should anticipate it and have the part or parts ready so we can keep the wagon out. As Bachman is to build them, please keep him posted, and where

[ATTACHMENT/ENCLOSURE]

you are in doubt as to a change better consult together and decide.

I understand you are making new axle and wheels with knuckle nearer center and will get it all ready. Should the present knuckle work perfectly satisfactorily, it may be that it would be better to stick to it, as the wheels are stock size and make, but if not satisfactory after a good run you can change. Also you should go ahead and get a set of wheels with Tumpkins bearings and have them all ready for a trial.

Also you should get Tumpkins for Motor and jack and have them ready, so that when you want to try it will not take 2 or 3 weeks - just anticipate on this wagon to the limit and have things ready before you need them. You had better have a set of springs for front - perhaps single like autos would be better on front as it would load body to axle better.

Plates for Fred Ott - We shall use a lot of Monel metal plates for forming veneers. I think those 1/16 thick will be the ones we shall adopt. Whatever Ott and Aiken together request on this plate viz please have done.

Moore is to teach Work's men how to make speaker diaphragms and when learned they go back to Phono. Works. He also works out and teaches Al Wurth's men how to make matrices for disks.

[ATTACHMENT/ENCLOSURE]

You should take up with Weber the speaker parts. You are making 6 models - they have been in shop over a month - one at least should be selected from those already in Moore's possession and turned over to Weber so he can go ahead and devise tools to make them with.

It is best to make no change whatsoever. Moore is fully informed on the subject. See Weber and Moore together and start Weber straight on it.

Anderson is to furnish Weber the working drawings and model of the Horn disk. This should be done as soon as possible so we get it out of Engineering department.

The small hornless table machine, I understand will be done in two or three days - necessary detail drawings for this should be got out and the model finished and all turned over to Weber.

The only unsatisfactory part of this machine is the legs. I have asked Anderson to make attachable in some way a variety of legs so we can get the right design.

Regarding the 50 1/8 tube filling machines and the other machines of which I signed an order today, Anderson should put them through the same as he did with the 50 1/4 inch tube machines to wit: getting bids outside and making certain parts in Phono. Works and Lab.

Smith will prepare drawings for the tube ringing and other machines that are necessary to go with the 50 loaders. Please help him out in the draughting.

[ATTACHMENT/ENCLOSURE]

Keep up experimenting with rectifiers. We must have something for the 1 Horse and sparking batteries.

I am giving instructions to the various experimenters and you will help them out as they want it.

We want a good headlight on 1 Horse No.2 wagon for night running.

The artist who is making up Concrete Cabinet - I ordered him to go ahead and get plaster moulds so that he could make one big cabinet per day complete. Please look after this and help with any hinges, iron reinforcement, etc. he wants. When you are satisfied he can make them O.K. and cheap, speak to Weber to give him some room in any old place where he can mould and make one per day, but do not let him go ahead until Weber and Dyer are satisfied with the results.

Edison.

Aug. 3, 1911.

Messrs. Edison Bachman & File:

General report on Wagon No. 2.

Speed runs were made with the different sprocket combinations and it was found that not more than 11.5 M. P. H. could be made with 16 cells with the best gear ratio as beyond the above limit, the motor speed dropped in proportion as the gear ratio was increased. Therefore to get the speed called for it was necessary to reduce the length of active wire on the armature so as to bring the motor speed up to 1800 and adjust gear ratio to give 14 M. P. H.

I decided to put the armature winding and segments in multiple, thus increasing the speed and at the same time doubling the copper section and reducing the armature resistance to 1/4 of its present value.

This can be done without rewinding and will be ready Saturday the 5th.

The side angle frame shows tendency to buckle back of the truss rod and in new mounting angle section will have to be increased as well as trussed.

Tie rod on front axle broke on account of flaw or crack in the rod.

New axle received for shorter knuckle, also 2 front wheels.

Ordered steering and brake rod ends, also 2 front side springs.

Laying out design for new angle frame and Wyatt roller bearings on jackshaft.

D. M. BLISS.

August 14th, 1911.

Mr. Meadowcroft,

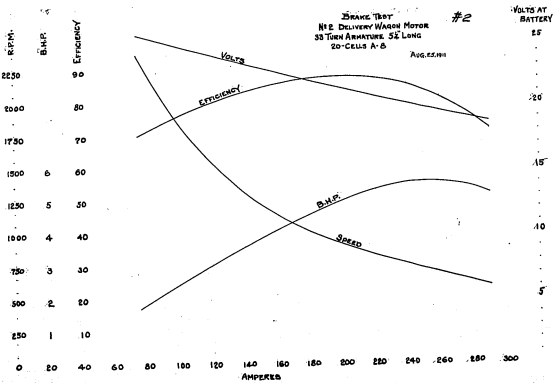
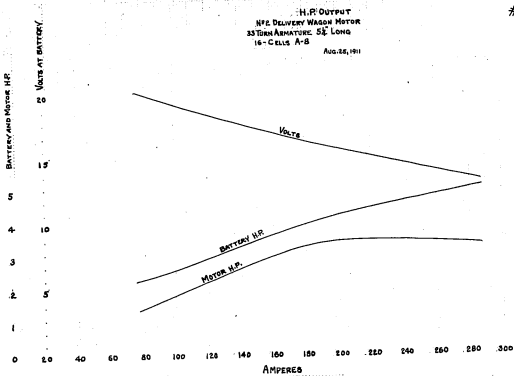
Trial runs at 14 M.P.H. show that 130 to 300 amps is required and that the average losses are 2.5 volts on battery and 3 volts on motor, controller, & wiring making 5.5 volts in all. We have rewound the motor to 15 volts, increased the length of field & <sup>armature</sup> ~~curvature~~ section 50% and the sections of copper 33 1/3% so as to get the H.P. at the low voltage and reduce the copper losses as much as possible on 300 amp 14-15 volt battery voltage.

The Motor will be finished tomorrow and test started. The new motor is 100 lbs heavier than that in wagon # 1.

Detailed figures will be given as soon as test is started.

D.M.Bliss.





R.P.M.

2000

1800

1600

1400

1200

1000

800

600

400

200

0

B.H.P.

4

3.5

3

2.5

2

1.5

1

.5

0

EFFICIENCY

80

70

60

50

40

30

20

10

0

BRAKE TEST ON  
 N°2 DELIVERY WAGON MOTOR  
 33 TURN ARMATURE 5½" LONG  
 16 CELLS A-B

AUG. 28, 1911

#3

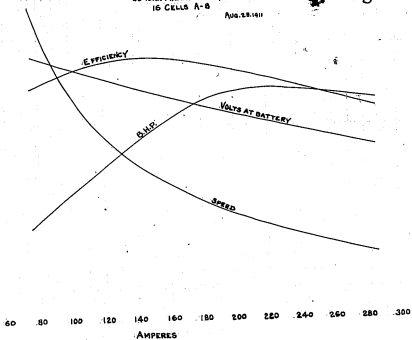
VOLTS AT BATTERY

20

15

10

5



VOLTS AT BATTERY

25

20

15

10

5

0

BATTERY AND MOTOR H.P.

6

4

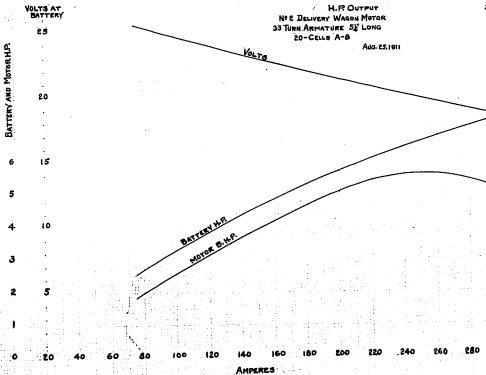
2

0

H.P. OUTPUT  
 N°2 DELIVERY WAGON MOTOR  
 33 TURN ARMATURE 5½" LONG  
 20-CELLS A-B

AUG. 28, 1911

#4



August 29th, 1911.

Mess. Edison, Bachmann, & Meadowcroft.

Preliminary Test of No. 2 Delivery Wagon

A large number of tests have been made with different gear ratios and under various conditions of load in the endeavor to obtain a speed of 14 miles per hour, and at the same time a capacity for taking the Eagle Rock climb successfully, with 16 cells for battery. The figures detailed show that on the 14 mile gear the drop in battery voltage with 16 cells is so great on the hill climbing ~~fast~~ that the voltage at the motor terminals is too low to develop the required horsepower to take the hill.

The best gear ratio on 16 cells in the present wagon is 12.5 to 1. This gives 9.85 miles per hour with 800 lb load, and will take Eagle Rock in 14 minutes with 320 lb load.

The motor will deliver up to 6 H.P. without over-heating if the voltage does not drop. To make the speed of 14 miles per hour and also climb Eagle Rock, either a change gear of 2 to 1 or an increased number of cells would be necessary; either of these will increase the cost of construction considerably.

The truss rods and clamps on the present light angle iron frame have broken repeatedly. We are now mounting motor on heavier frame using two side springs on front axle and roller bearings on jack shaft. As soon as this work is done we will begin the endurance test on a 12 to 1 gear.

The curves attached show that the motor efficiency is high and the horsepower well maintained between wide ranges of battery voltage. Roller bearings for the jack shaft and ball bearings on the motor will improve the speed slightly, but from the tests we have made with the present battery of 16 cells, it looks as though 10 miles per hour with the ability to make the Eagle Rock test on 12 to 1 gear is the limit.

D. M. Bliss

Aug. 29th, 1911.

RECORD OF TESTS ON #2 DELIVERY WAGON WITH VARIOUS GEAR RATIOS.  
TESTS MADE ON LEVEL COURSE IN FAIR CONDITION.  
LOAD 800 LBS. (INCLUDING DRIVER)  
BATTERY -- 16-A-8 "EDISON" CELLS

|        | <u>AVERAGE VOLTS</u> | <u>AVERAGE AMPS.</u> | <u>RATE OF SPEED</u> | <u>GEAR RATIO</u> |
|--------|----------------------|----------------------|----------------------|-------------------|
|        | 15.03                | 166.13               | 11.83 mi. per hr.    | 1 to 5.8          |
|        | 18.13                | 146.73               | 12.749               | 1 " 7.25          |
| (20    | 21.06                | 164.68               | <u>14.70</u>         | 1 " 7.25          |
| cells) | 18.31                | 80.                  | 9.27                 | 1 " 12.5          |
|        | 18.38                | 66.20                | 9.73                 | 1 " 15.08         |
|        | 18.75                | 62.51                | 9.                   | 1 " 18.85         |

The above tests were taken with plain bearings  
in jackshaft. Since then frame has been rebuilt and  
Hyatt rollers put in jackshaft.

ENDURANCE TEST ON FOUR UNIT RECTIFIER  
FOR  
IGNITION BATTERY CHARGING

LOG OF RUN

| Sept. 13 | Amps. 9.5 | Hours 24 |
|----------|-----------|----------|
| " 14     | " 10.5    | " 24     |
| " 15     | " 10.5    | " 24     |
| " 16     | " 10.5    | " 24     |
| " 17     | " 10.5    | " 24     |
| " 18     | " 10.4    | " 24     |
| " 19     | " 10.5    | " 24     |
| " 20     | " 10.3    | " 24     |
| " 21     | " 10.5    | " 24     |
| " 22     | " 10.6    | " 24     |
| " 23     | " 10.5    | " 24     |
| " 24     | " 10.4    | " 24     |
| " 25     | " 10.3    | " 24     |
| " 26     | " 10.4    | " 24     |
| " 27     | " 10.4    | " 24     |
| " 28     | " 10.5    | " 24     |
| " 29     | " 10.5    | " 24     |
|          | Total     | " 400    |

Temperature rise of contact plate 35° C.

No appreciable wear on contacts at end of run.

Test concluded on Sept. 29th in order to combine the units  
with large outfit for charging delivery wagon.

S. G. Langley.

October 7th, 1911.

Messrs. Edison, Bachman & Meadowcroft:

ACCIDENTS TO #2 DELIVERY WAGON  
WHILE RUN ON SELECTED COURSE

October 7th

Both headlights went out just after leaving Bloomfield Center. Found connections loose in pin plug connectors; repaired same and completed the course.

Arriving at Laboratory at 9.50 P. M. found right hand angle iron broken in two places; one where riveted to casting on front axle and the other break just outside the jack shaft bearing, as shown in sketch below.

These breaks were caused by the twisting strain on Chassis and vibration.

We are now changing angle iron frame work to a three point suspension, which will give greater flexibility to front wheels without affecting the rest of the Chassis.

*Chester*

October 7th, 1911

Messrs. Edison, Bachman & Meadowcroft:-

CHAPTER OF ACCIDENTS TO #2 DELIVERY WAGON  
WHILE BEING RUN ON SELECTED COURSE

Aug. 28th

Truss rods on both sides of under frame work snapped and weight of batteries and driver in front, sprung front axle. Truss rods were replaced.

Aug. 30th

Both truss rods on sides under frame broken again by bumping over average roads. Truss rods repaired again.

Sept. 5th

Both trusses snapped again and main chain jumped the sprockets (due to slackness from sag of angle iron frame) and wedged between differential sprocket and bearing casting in such a way that it was necessary to disassemble the whole jack shaft to remove it. The strain of wedging while going at full speed, and the sudden stop at the vehicle, broke the commutator end leg off the motor.

Sept. 6th

The spokes of front wheels loosened in hub, partly due to excessive shock and wheel being rim bound.

The wagon will now be dismantled and a new frame work and side springs will be put in front to better support the weight of batteries and driver. The new frame work is much stronger, though quite springy, and should make a good substantial rigging.

Another feature of the change is the "Hyatt" roller bearings in jack shaft, and ball bearings in motor.

ACCIDENTS TO #2 WAGON REBUILT WITH NEW  
FRAME, NEW JACK SHAFT, NEW AXLE AND FULL ELLIPTIC  
SPRINGS IN FRONT AND STRONGER FRONTWHEELS.

Sept. 25th

Both legs broken off sprocket end of motor, due to excessive shock from bumps. Angle iron supports fastened to motor to take place of cast iron legs.

Sept. 26th

Iron tire of left front wheel came off at Branch Brook Park, leaving tire bolts in wheel. It looked as though tire was not shrunk on tight enough in the first place and that the bolts were countersunk too deep. Tire was replaced and special attention paid to shrinking it on properly.

Oct. 3rd

Hand lever on upright of steering arm broke at Silver Lake. That part of steering gear was taken off an old wagon and whoever made it put too large a pin through the piece, thus weakening it where it gets the most strain. A new piece was made and properly brazed in place.

Iron tires on both front wheels have hammered out from rough roads and ~~is~~ are now 1/8" smaller in diameter than they were when first put on.

Rear rubber tires out very badly from sharp cobbles and rough road.

Oct. 3rd

Twisted tapered square end of upright on steering gear off. There was no flaw in the metal of any kind and must have twisted off due to excessive strain on same while going through deep sand. A new piece was made up of very <sup>high</sup> Chrome Nickel steel and properly adjusted to steering gear.

Oct. 5th

Two bolts holding motor down snapped off and caused the breaking of one of the angle irons supporting the motor. A new piece of re-enforced angle iron was put in with new and perfect bolts. The only thing that can account for the breaking of bolts is the great leverage the chain pull has on the motor. A suggestion was made to support the motor from the center of strain, which will be taken up as soon as possible.



(3)

Oct. 5th

Rubber tire on left hind wheel caught in sharp portion of road at Bloomfield Ave. & Franklin St. and was ripped off. Had to come in on channel rim. New tire was put on with special care.

Oct 6th

Commutator end motor support broken off at Montclair Center when going over some bumps in road at good speed, and motor chain came off, due to shifting of motor. Had to proceed carefully to get to Laboratory without further damage.

GENERAL DATA

About 700 miles in all have been covered by tests on the road, although frantic efforts were made to keep going day and night. 800 pounds were carried throughout the tests, the loose iron in rear of wagon bouncing up and down going over various portions of the road and putting greater strains on everything than a solid load.

Through the rough usage the new under frame work, axles and jack shaft stood up very well. Motor performance perfect.

J. T. Chesler.

October 16th, 1911

*Mr. Edison*

RECORD OF TEST RUNS  
OVER SELECTED COURSE IN #2 DELIVERY WAGON  
WITH NEW SWIVEL THREE POINT SUSPENSION FRAME.  
800 LBS. CARRIED BESIDES THE WEIGHT OF OPERATOR

| DATE        | RUN NO. | MILES<br>PER TRIP | HOURS | MIN. | REMARKS                                                                                                                                                                                                                                        |
|-------------|---------|-------------------|-------|------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 13     | 1       | 16.4              | 2     | 15   |                                                                                                                                                                                                                                                |
| " 13        | 2       | 15.2              | 2     |      | Could not complete Scotland St. as somebody removed plug from cells and therefore battery was not fully charged. Padlock and chain will be put on plug.                                                                                        |
| Oct. 13     | 3       | 16.4              | 2     | 25   |                                                                                                                                                                                                                                                |
| " 13        | 4       | 16.4              | 2     | 45   | One of the wires in head light broke at Bloomfield Center. Twenty minutes were lost repairing same                                                                                                                                             |
| Oct. 14     | 5       | 16.4              | 2     | 30   |                                                                                                                                                                                                                                                |
| " 14        | 6       | 16.4              | 2     | 20   | Lost bolt from left hand jack shaft bearing; bolt was not riveted over properly. Cotter pin sheared off from left-hand main brake stud due to brake shaft shifting. New cotter put in and a collar put on brake shaft to prevent its shifting. |
| Oct. 14     | 7       | 16.4              | 2     | 20   |                                                                                                                                                                                                                                                |
| " 14        | 8       | 16.4              | 2     | 30   |                                                                                                                                                                                                                                                |
| " 14        | 9       | 16.4              | 2     | 15   |                                                                                                                                                                                                                                                |
| Oct. 15     | 10      | 16.4              | 2     | 50   | Stopped by patrolman for to examine license to drive                                                                                                                                                                                           |
| Oct. 16     | 11      | 15.3              | 2     | 15   | Stalled on Scotland St. Cells not fully charged as current was off Sunday                                                                                                                                                                      |
| Oct. 16     | 12      | 16.4              | 2     | 10   |                                                                                                                                                                                                                                                |
| " 16        | 13      | 16.4              | 2     | 10   |                                                                                                                                                                                                                                                |
| " 16        | 14      | 16.2              | 3     | 27   | Got stuck in very deep mud at Scotland St. Had to wait to be towed out. Completed course on its own power. Iron tire on left hand front wheel came loose from hammering out on stone pavements and tire bolts sheared off.                     |
| Oct. 16     | 15      | 16.4              | 2     | 10   |                                                                                                                                                                                                                                                |
| " 17        | 16      | 16.4              | 2     | 20   |                                                                                                                                                                                                                                                |
| " 17        | 17      | 16.4              | 2     | 20   |                                                                                                                                                                                                                                                |
| Total Miles |         | 276.3             |       |      |                                                                                                                                                                                                                                                |

*J. Thaler*

*Sub. for*  
Call the address "Edison's New York"

*From the Laboratory*  
of  
Thomas A. Edison,

Orange, N.J. Oct. 17th, 1911

*file*  
*D. L. & W. R. Co.*  
*GAM*

Mr. T. E. Clarke, Gen'l Supt.,  
The D. L. & W. R. R. Co.,  
90 West St.,  
New York City.

Dear Sir:-

We beg to call your attention to the dangerous condition of crossing existing at Scotland St., Orange, N. J.

The sharp angle at this crossing and the large spaces between the boarded section and rail makes it very dangerous.

In order to cross with a vehicle it is necessary to go almost parallel with the tracks, as the gateman's shanty does not allow driving at right angles to the railroad.

Should a vehicle get caught in the railroad tracks it would be almost impossible to flag a westbound train in time to prevent a bad smash-up, on account of the big curve in the railroad approaching the Scotland St. crossing.

Even if nothing else is done there should at least be a signal put in such a way that it can be set from the gateman's shanty *and the opening between the rails and boarded section reduced.*

Our vehicles have to pass over this crossing at all hours of the day and night, and on several occasions wheels caught in the tracks and had to be lifted out. About two weeks ago the wheel of an automobile was wedged between rail and wood planking and was in immediate danger of being wrecked by two trains coming in opposite directions.

We hope that you will look into this matter and give it your early attention.

Thanking you in advance, we are,

Yours very truly,  
EDISON LABORATORY  
Per

JTC/ES

October 18th, 1911

*Mr. Meadows*

RECORD OF TEST RUNS  
OVER SELECTED COURSE IN #2 DELIVERY WAGON  
WITH SWIVEL THREE POINT SUSPENSION FRAME  
800 LBS. CARRIED BESIDES THE WEIGHT OF OPERATOR

| DATE    | RUN NO. | MILES    |            | REMARKS                                                                                                                                                                                                                                                                                                                                                                     |
|---------|---------|----------|------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         |         | PER TRIP | HOURS MIN. |                                                                                                                                                                                                                                                                                                                                                                             |
| Oct. 17 | 18      | 16.4     | 2 25       |                                                                                                                                                                                                                                                                                                                                                                             |
| "       | 17      | 19       | 3 45       | Steering arm on upright twisted off due to lower bearing for upright of steering gear freezing. Had to make temporary repairs on road and return to Laboratory. Steering gear will be fixed and a small compression grease cup put on the bearing that froze                                                                                                                |
| Oct. 18 | 20      | 16.4     | 2 20       | Front axle broke about eight inches from left-hand spring. Could not tell whether a flaw or weld gave way until axle is taken out and examined. Front tire on front left wheel is about 3/16" larger than the wheel, allowing the spokes to loosen in rim and hub, making the wheel too weak to continue further tests. Right hand tire on hind wheel worn down to channel. |

A new axle re-inforced at the spring seats will be put in and a heavier set of wheels in rear with larger rubber tires will be substituted for the present lighter carriage wheels. Special steel tires will be put on both front wheels which will prevent hammering out and stretching.

Total miles up to date with swivel frame 318.3

*J. J. Chesler*

*Mr. Mueselberg*

October 18th, 1911

Front left-hand iron tire stayed on wheel for 620 miles.

Rear left-hand rubber tire lasted through 700 miles,

Old frame lasted 729 miles/

Rear right-hand rubber tire lasted 1041 miles.

Left-hand wheels travel over roughest part of the road.

*J. T. Chesler*

THE DELAWARE, LACKAWANNA & WESTERN RAILROAD COMPANY,  
OFFICE OF GENERAL SUPERINTENDENT,

T. W. CLARKE,  
General Superintendent.

SCRANTON, PA.      October 21, 1911.

20889: Orange, condition of Scotland St. crossing.

Mr. J. T. Chesler,  
o/o Edison Laboratory,  
Orange, N. J.

Dear Sir:-

I have your favor of the 18th inst., calling attention to existing conditions at Scotland St. crossing, Orange. This will be looked into at once, and I will write you further.

Yours truly,

  
General Superintendent.

C-F

Oct. 26th, 1911

*Mr. Meadows*

The following is a record of the amount of wear on axles, bearings, chains, sprockets etc. on #2 Delivery Wagon after running over selected course for 1000 miles.

Wear on tapers of right and left stud axles  
.002" to .005"

End thrust wear on right and left hand stud  
axles - .03125"

Wear on jack shaft .005" to .015"

Wear on Hyatt roller bearings in jack shaft -  
.004" to .013"

Wear on solid pins from main chain from .023"  
to .065"

Wear on side chains from .002" to .005"

Wear on differential sprocket from .0625"  
to .128" per tooth

Wear on motor sprocket .002" to .008" per tooth

Wear on side sprockets .002" to .006" per tooth

There is no appreciable wear on bronze bearings  
of motor.

There is about .005" wear on bronze bushings  
for stud axle pin

The brakes show no appreciable wear, excepting  
the lining, which has worn to a smooth surface and will  
probably last six or seven thousand miles more.

*wear*  
and lessened by fibre washers. The end thrust on stud axles can be taken up

New chrome nickel steel "Hyatt" rollers are  
coming through for the jack shaft. The Hyatt Company claims  
that these rollers are better suited for our service.

A new shaft is being made for these bearings  
and will be hardened where it engages in bearing.

Had to put on a new roller chain for main drive  
as the old solid pin chain wore so much that the drive was  
very jerky and inefficient.

*A new sprocket of high carbon steel will be  
made for the differential. The present sprocket was furnished  
with differential*

(2)

Made a test as to power required to drive the jack shaft wheels etc. and got the following results:

Motor running free through resistance 35 amperes.

Jack shaft with side chains off driven with solid pin chain @- 57 amperes.

Jack shaft with side chains off, driven with roller chain -- 50 amperes.

Motor driving jack shaft and hind wheels jacked up (either chain)-- 3 amperes more than driving jack shaft only.

According to above figures it takes 15 amperes to run jack shaft only; we could not determine whether this loss was most in jack shaft bearings or in chain. When the new rollers are inserted in their housings and a new shaft put in, this test will be repeated and a report covering it sent in.

The losses shown in the foregoing would tend to raise the watts per ton mile and the test on another sheet shows it at 161.5 watts per ton mile.



Oct. 31, 1911

The time given for each run is about five minutes in excess of usual time and the drivers should be able to go and come on schedule unless something happens. That would make nine runs per day at 16.4 miles per run, or 147.6 miles in twenty-four hours; but we find it necessary to grease the wheels about every fifty miles and that would split one of the runs.

SCHEDULE FOR DRIVERS  
OF  
#2 DELIVERY WAGON

Oct 31, 1911

| NAME         | LEAVE<br>1ST<br>RUN | ARRIVE<br>1ST<br>RUN | CHANGE | LEAVE<br>END<br>RUN | ARRIVE<br>END<br>RUN | CHANGE | LEAVE<br>3RD<br>RUN | ARRIVE<br>3RD<br>RUN | CHANGE |
|--------------|---------------------|----------------------|--------|---------------------|----------------------|--------|---------------------|----------------------|--------|
| John Pfaff   | 9 P.M.              | 11.30<br>P.M.        | 10 M.  | 11.40<br>P.M.       | 2.10<br>A.M.         | 10 M.  | 2.20<br>A.M.        | 4.60<br>A.M.         | 10 M   |
| Chas. Poyer  | 5 A.M.              | 7.30<br>A.M.         | 10 M.  | 7.40<br>A.M.        | 10.10<br>A.M.        | 10 M.  | 10.20<br>A.M.       | 12.50<br>P.M.        | 10 M   |
| I. P. Rodman | 1.00<br>P.M.        | 3.30<br>P.M.         | 10 M.  | 3.40<br>P.M.        | 6.10<br>P.M.         | 10 M.  | 6.20<br>P.M.        | 8.50<br>P.M.         | 10 M   |

Drivers must note down in their books the following voltage  
*Volt* at start.

Time of start

Time of finish

Mileage

All details as to location etc. of any accident or breakdown which might occur while on their runs.

In cases where the vehicle is stalled, stalling current and voltage must be taken.

The temperature of the air must also be taken at each run. A thermometer will be found on wall at entrance to Laboratory and can be read when driving by.

*Mr. Meadowcroft*

RECORD OF TEST RUNS  
OVER SELECTED COURSE IN #2 DELIVERY WAGON  
WITH NEW FRONT AXLE.  
HEAVIER RUBBER TIRES ON REAR AND STEEL TIRES  
SHRUNK ON FRONT WHEELS.

| DATE    | RUN | MILES<br>PER TRIP | HOURS | MIN. | REMARKS                                                                                                                                       |
|---------|-----|-------------------|-------|------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 23 | 21  | 16.4              | 2     | 25   |                                                                                                                                               |
| "       | 24  | 22                | 2     | 27   |                                                                                                                                               |
| "       | 24  | 23                | 2     | 15   |                                                                                                                                               |
| "       | 24  | 24                | 2     | 20   | Solder melted from one of<br>the battery connectors due to heavy japing on end of connector not<br>allowing a good contact with battery post. |
| Oct. 24 | 25  | 16.4              | 3     | 30   | Got stuck in very deep mud;<br>had to be towed in.                                                                                            |
| "       | 24  | 26                | 2     | 15   |                                                                                                                                               |
| "       | 25  | 27                | 2     | 20   |                                                                                                                                               |

Grand total mileage 1180.1

Total miles on swivel frame up to date 451 miles

Total mileage on new front axle and new 1-1/2"

rubber tires -- 114.8

Road speed test with 16 cells and 800 pounds load  
(excluding driver)

Running for one-half hour to use up gas voltage we got  
a speed of 9.5 miles per hour.

Voltage when taking off charging current was 23 volts.

Voltage for speed test 19.5

This speed of 9.5 miles per hour is .18 of a mile per hour  
better than test report sent in to you Aug. 29th, 1911 under the  
same conditions of gear ratio and voltage and is probably due to  
the rollers in the jack shaft and swivel frame.

A speed of 12.19 miles with 800 lb. load was attained  
with a gear ratio of 1 to 7.25 as shown in report of Aug. 29th,  
but we could not climb Eagle Rock Hill with ratio under such  
conditions.

RECORD OF TEST RUNS  
 OVER SELECTED COURSE IN #2 DELIVERY WAGON  
 WITH NEW FRONT AXLE.  
 HEAVIER RUBBER TIRES ON REAR AND STEEL  
 TIRES SHRUNK ON FRONT WHEELS.

| DATE    | RUN NO. | MILES<br>per trip | HOURS | MIN. | REMARKS                                                                                                                      |
|---------|---------|-------------------|-------|------|------------------------------------------------------------------------------------------------------------------------------|
| Oct. 25 | 28      | 16.4              | 2     | 25   |                                                                                                                              |
| "       | 25      | 16.4              | 2     | 20   |                                                                                                                              |
| "       | 25      | 16.4              | 2     | 40   | Rear tail light burnt out<br>Had to stop to repair same.                                                                     |
| "       | 26      | 16.4              | 2     | 30   |                                                                                                                              |
| "       | 26      | 16.4              | 2     | 55   | Chain came off on Orange Rd.<br>due to it being slack.                                                                       |
| "       | 27      | 16.4              | 2     | 35   | Chain came off again at<br>Bloomfield Ave. Found thread stripped on casting where chain tighten-<br>ing screw comes through. |
| Oct. 27 | 34      | 16.4              | 2     | 20   |                                                                                                                              |
|         | Total   | 114.8             |       |      |                                                                                                                              |

Grand total mileage 1180.1

Total miles on swivel frame up to date --565.8

Total mileage on new front axle and 1-1/2" rubber tires --238.6

Oct. 26th measured course 1/2 mile long

| <u>Watts per ton mile test</u> |                      |                      |                      |                           |  |
|--------------------------------|----------------------|----------------------|----------------------|---------------------------|--|
| <u>Total Wt.</u>               | <u>Average RPMs.</u> | <u>Average Volt.</u> | <u>Miles per hr.</u> | <u>Watts per ton mile</u> |  |
| 26000 lbs.                     | 102.34               | 19.6                 | 9.55                 | 151.53                    |  |

RECORD OF TEST RUN  
OVER SELECTED COURSE IN 24 DELIVERY WAGON  
WITH NEW FRONT AXLE  
HEAVY RUBBER TIRES ON REAR WHEELS  
AND STEEL TIRES SHRUNK ON FRONT WHEELS

*Mr. McKeown*

| DATE    | RUN NO. | MILES PER TRIP | HOURS | MIN. | REMARKS |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|---------|---------|----------------|-------|------|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 27 | 35      | 16.4           | 2     | 20   |         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| "       | 27      | 36             | 16.4  | 2    | 25      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| "       | 27      | 37             | 16.4  | 3    | 15      | Got stuck on Burnside St. several times in deep & loose sand, but after letting the battery rest a while, managed to pull through. Got stuck later on Scotland Street, but managed to get out in the same way. The battery dropped to 7 volts and 265 amps. while wagon was stalled. The voltage throughout this run did not hold up as good as usual and the quicker drop may be due to the colder weather. This particular set of cells were on charge for over nine hours at from 70 to 80 amperes. |

Oct. 27 38 16.4 2 30  
 " 27 39 16.4 3 52 Got stuck in mud and sand at Scotland St., the voltage dropping to about 7 and the current 270. Had to be towed in by team. This set of cells were on for about 8-1/2 hours at from 70 to 80 amperes.

Oct. 28 40 16.4 2 35 Could not complete Scotland St. on account of stalling. This set of cells were on for about 12 hours at from 70 to 80 amperes. *Both boxes which hold left hand gear shaft being to angle iron frame. When the rubber ordered from the Chemist works comes in, a probe will be put under bearing to take the shock.*

Total mileage 98.4

Grand total mileage 1278.5

Total miles on swivel frame 664.2  
 up to date

Total miles on new front axle and 1-1.2" rubber tires - 337.

Boxes with handles and ball sockets are being made to hold each set of cells. This will facilitate the changing of the cells and increase the number of runs. Also if the voltage is affected by the lower temperature, the box should eliminate that difficulty.

We expect to get these boxes Monday afternoon and a new schedule will be started as per attached copy.

*The Meadows*

RECORD OF TEST RUN  
OVER SELECT COURSE IN #2 DELIVERY WAGON  
WITH NEW FRONT AXLE  
HEAVIER RUBBER TIRES ON REAR WHEELS  
AND STEEL TIRES SHRUNK ON FRONT WHEELS.

| DATE      | RUN NO. | MILES PER TRIP | HOURS | MIN. | REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-----------|---------|----------------|-------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 28th | 41      | 16.4           | 3     | 20   | Got stuck in mud on Scotland St. Voltage dropped to 7 Amps. went up 270. Was pushed out by several men and finished the run.                                                                                                                                                                                                                                                                                                                                    |
| Oct. 28   | 42      | 16.4           | 2     | 20   | One portion of Scotland St. is undergoing repairs and the dirt and cobbles are dumped in such a mass in the road that it is almost impassable. It takes a little more time to get by that point now.                                                                                                                                                                                                                                                            |
| Oct. 28.  | 43      | 16.4           | 2     | 20   | Coming down grade on Cherry St. the front wheels hit a cobble stone and skidded into raised track of the Eagle Hook Car Line. The force with which the wheels struck the track broke the ball connection from righthand knuckle to steering lever and the wagon bumped its top against a tree and smacked the front piece of roof frame work and tore the panel board roof. Made temporary repair on road and fixed the ball connect on properly at Laboratory. |
| Oct. 28   | 44      | 16.4           | 2     | 30   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Oct. 29   |         |                |       |      | Could not make Sunday morning run on account of power shutting down at 12 P.M. Saturday instead of 6 A.M. Sunday.                                                                                                                                                                                                                                                                                                                                               |

Total miles 65.6

*Unusually* The breaking of the ball connection was, of course, due to the ~~new~~ great strain of bumping into car track. However, when the next steering arm is designed a stronger ball connection will be substituted.

The new hardened jack shaft is being rushed through, as are the new enclosing boxes for the battery. When the new jack shaft is put in another test will be made to determine the losses in transmission etc.

Total miles on swivel frame 729.8

Total miles on new front axle and 1-1/2" rubber tires -- 402.6

*Mr. Meadows*

RECORD OF TEST RUN  
OVER SELECT COURSE IN #2 DELIVERY WAGON  
WITH NEW FRONT AXLE  
HEAVIER RUBBER TIRES ON REAR WHEELS  
AND STER. TIRES SHRUNK ON FRONT WHEELS

| DATE    | RUN NO. | MILES PER TRIP | HOURS | MIN. | REMARKS                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                             |
|---------|---------|----------------|-------|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 30 | 45      | 16.4           | 2     | 25   | One of the pins which holds steering connecting rod to knuckle sheared its cotter and came out while going full speed on Bloomfield Ave., Montclair. Would have been run into by trolley only for motorman's quick action in applying the brakes to his car. Steel tires strting to hammer out on front wheels, although they are fairly tight. Spokes in left-hand wheel shows signs of loosening. The left-hand bronze bushing is out out pretty bad and has considerable play. |                                                                                                                                                                                                                                                                                             |
| Oct. 30 | 46      | 16.4           | 2     | 45   | The tonneau was stuck right on part of the test course and driver of wagon stopped to help fix it.                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                             |
| Oct. 30 | 47      | 16.4           | 2     | 40   | Trip on speedometer got stuck and would not register; stopped to fix it.                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                             |
| Oct. 31 | 48      | 16.4           | 2     | 25   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                             |
| "       | 31      | 49             | 16.4  | 2    | 25                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Made an attempt to get in two regular runs Monday morning, but could not, as all the cells were discharged Saturday night, and due to the current shutting off at 12 P.M. instead of 6 A.M. the next morning, the cells only got about five hours charge and would not complete the course. |

This test has shown us that it will be necessary to double safeguard the steering mechanism, therefore all pins will be changed and instead of being held from jarring loose by only a cotter, a thread will be cut on one end of each pin and a nut put on locked with a cotter. These pins will be made as soon as possible so as to be ready to replace the present ones.

The chrome nickel steel rollers are now here and the shaft is being completed.

Two of the battery cases and a platform truck are completed and will be put in service as soon as the casters are attached.

A layout for a new steering arm will be started to-day and made up as soon as drawings are completed.

Total miles on drive frame 811  
Total " on new front axle and 1 1/2" rubber tires 484.6

RECORD OF TEST RUN  
OVER SELECTED COURSE IN ~~THE~~ DELIVERY WAGON  
WITH NEW FRONT AXLE  
HEAVIER RUBBER TIRES ON REAR WHEELS  
AND STEEL TIRES ON FRONT WHEELS

| DATE    | RUN NO. | MILES<br>PER TRIP | HOURS | MIN. | REMARKS                                                                                                                                                                                                                                                              |
|---------|---------|-------------------|-------|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Oct. 31 | 50      | 16.4              | 2     | 20   | The links in motor chain pulled apart and broke. Had to put on solid pin chain again.                                                                                                                                                                                |
| Oct. 31 | 51      | 16.4              | 2     | 15   |                                                                                                                                                                                                                                                                      |
| "       | 31 52   | 10.4              | 3     | 30   | At Bloomfield Ave. Silver Lake solid pin motor chain broke. Had to be towed back to Laboratory. After arriving at Laboratory a close inspection was made of the various parts and we found the angle iron framework broken through where it suspends from rear axle. |

A new angle iron framework is being pushed through, built on almost the same lines as the broken one, but supported everywhere through rubber cushioning. All of the parts, such as jack shaft bearings, motor etc. will also have this rubber put in with the mounting.

The new chrome nickel steel rollers and hardened shaft will also be put ~~in~~ on this frame.

Some of the other changes will be as follows:

1st - Motor supported in a direct line of the chain strain, thus eliminating the leverage on the belts holding it down.

2nd - A change of sprocket sizes to prevent the excessive strain and tremendous wear on the motor chain.

3rd - A new and substantial steering gear; one that will stand steering through deep sand.

4th - Good Phosphor bronze bushings in the wheels; the last were order~~d~~ ed bronze, but proved to be only composition.

5th - The new pavement block front wheels. If these wheels are not finished by the time the rest of the wagon is, the test will be started on the regular steel tired ones.

6th - The new battery boxes with a plugging device attached, (now ready) facilitating the changing of cells, bringing down the time of change to a minimum and protecting the battery from extreme low temperature

We will try to change the present motor hoods to take a ball bearing, as it will delay out tests to wait for the new castings. If this change cannot be made in the short time we have, it ~~be~~ will be



(2)

necessary to let the motor go with the plain bronze bearings.

I have been trying to get an estimate of the time it will take to finish the wagon through the various departments and find that it will probably have to be next Tuesday or Wednesday, November 8th, before it will be ready for test.

The total mileage through which various parts of wagon lasted before being taken down, are as follows:

|                           | Swivel frame | -----855-Miles----- |   |   |   |   |   |   |   |
|---------------------------|--------------|---------------------|---|---|---|---|---|---|---|
| New front axle            | -----        | 527.8               | " | " | " | " | " | " | " |
| New rear wheels and tires | ---          | 527.8               | " | " | " | " | " | " | " |
| Rear axle                 | -----        | 1604.4              | " | " | " | " | " | " | " |
| Internal Expanding Brakes | ---          | 1604.4              | " | " | " | " | " | " | " |
| Motor                     | -----        | 1604.4              | " | " | " | " | " | " | " |
| Controller                | -----        | 1604.4              | " | " | " | " | " | " | " |
| Differential              | -----        | 1604.4              | " | " | " | " | " | " | " |
| Differential Sprocket     | ---          | 1260.               | " | " | " | " | " | " | " |
| All other sprockets       | -----        | 1604.4              | " | " | " | " | " | " | " |
| Both side chains          | -----        | 1604.4              | " | " | " | " | " | " | " |
| Solid Pin Chain           | ---          | about 1300.         | " | " | " | " | " | " | " |

166  
122  
127

Orange  
THE DELAWARE, LACKAWANNA & WESTERN RAILROAD COMPANY,  
OFFICE OF GENERAL SUPERINTENDENT,

T. E. CLARKE,  
General Superintendent.

SCRANTON, PA. November 4, 1911.

20889:

*M. J. J.*

NOV 6-911

Edison Laboratory,

Orange, N. J.

Gentlemen:

With reference to your letter of 18th ult.. I will ask you to read the two communications attached from our Engineering Department at Hoboken, which if not satisfactory, I will appreciate any further information from you.

It is assumed, apparently, that the basis of your complaint is the incident occurring to an automobile which you say became wedged between the rail and planking in the crossing at Scotland Street, and which our people believe was due to careless handling rather than inferior condition. As you know, we can hardly be expected to provide for such exigencies. If, however, the assumption is incorrect, I shall be pleased to continue the investigation.

Yours truly,

*T. E. Clarke*  
General Superintendent.

*Please return.*

C-F

[ATTACHMENT/ENCLOSURE]

Form S. R. 44  
7-11

THE DELAWARE, LACKAWANNA & WESTERN RAILROAD CO.  
ENGINEERING DEPARTMENT

*Mr. Ray*  
*Note this plank to*  
*John Alon Am...*  
*AP*

11/91  
LACKAWANNA R.R.  
GEN'L SUPT'S OFFICE  
NOV  
4  
1911  
FILE 2889

Hoboken, N. J., 11/1/1911-

Mr. A. J. Neafie, P. A. E.,  
Building.

Dear Sir:-

In regards to the attached correspondence covering Scotland Street Crossing, Orange, N. J., about the crossing having an opening between the rails and the plank, which will allow automobiles to get in between plank and rail.

I will state, that I went there and looked at this crossing and find that the plank is groved and fits tight in the throat of the rail which will allow no cars to get in between the rail and the plank what ever.

I asked the gate tender about this and he stated that the man ran his automobile down the track off--the end of the crossing and he helped hold the automobile wheel from the track, which if he had been attending to his business, he would not have run off the end of the crossing plank.

*Mr. Neafie*  
*AP*  
*11/3/11*

Yours truly,  
*G. R. Kinstead*  
Roadmaster.

[ATTACHMENT/ENCLOSURE]

Form P. A. E. 4-A

8-11

THE DELAWARE, LACKAWANNA & WESTERN RAILROAD CO.



Office of Principal Assistant Engineer.

A. J. NEARPE,  
Principal Assistant Engineer.

Hoboken, N. J., October 25, 1911

Mr. F. Kierstead,  
Roadmaster.

Dear Sir;

Herewith please note correspondence covering Scotland St. Crossing, Orange, N.J. It would seem from this correspondence that there is an opening between the rail and the plank. Lock this crossing over, place same in A #1 shape and advise me as to its condition.

I note by letter attached that automobile wheel was fast in the opening between rail and planking. If it is possible for an automobile wheel to become fastened between the rail and the planking there is something radically wrong there. Render me report.

Yours truly,

AJN.O

P. A. E.

Nov. 11th, 1911

REPORT ON PROGRESS OF REBUILDING  
#2 DELIVERY WAGON

The frame, jackshaft and sprocket cutting is completed; also ball-bearing motor with new supports. The new differential sprocket will hold up the complete assembling as we have sent it out to be case hardened to J. A. Williams & Co. of Brooklyn, and will get it back Monday, November 13th. Williams & Co. were the only people we could find who had the facilities for this work; it was too large a piece for us to do. The hardened sprocket is an important point in our experiments and it will save time in the end to wait for same. AS SOON as we get the differential sprocket the wagon can be assembled and should be ready to run by Tuesday Morning, November 14th.

There are several tests I want to make, such as watts per ton mile, speed etc. and those will put the endurance run off until Wednesday.

We will not wait for the new steering gear to be finished, but will attach same when ready; the design for this steering gear is nearly completed.

All of the machine work and assembling (excepting electrical connections) is in charge of Mr. Nicolai.

The forging for the wood block wheel has been ordered from McDougall & Potter of New York; and will be shipped some time next week. I will look after the wooden pavement blocks and have them ready to assemble on wheel. The endurance run will be made on the steel tired wheels until wood tired wheel is completed.

Nov. 15th, 1911

*Chesler*

Mr. T. A. Edison:-

The attached prints show the condition of part of our Endurance Test Course on Bloomfield Ave. just below Montclair. It will probably be impossible to go through this place for a month or two, therefore it would be best to pick out a new stretch.

Will you go over the course and see what can be found, or shall I try to locate a rough road?

JTC/ES

J. T. Chesler

*You go over it & find a  
bypass —*

*Σ*

[ATTACHMENT/ENCLOSURE (PHOTOCOPY)]



[ATTACHMENT/ENCLOSURE (PHOTOCOPY)]





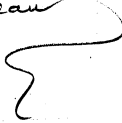
NOV 20 1917

Bliss -

I would like to have the  
drop taken on my Anderson  
Vehicle, when going up  
Eagle Rock Hill with 2 persons

Wait drop around Field  
Communitator, Wiring, Controller  
& Battery =

No hurry about it but  
when you can



Nov. 20th, 1911

PRELIMINARY TESTS  
ON #2 DELIVERY WAGON  
WITH "SHOCK PROOF" FRAME AND BALL BEARING MOTOR

The wheels of wagon were jacked up and run for over six hours at normal speed to ease up jackshaft bearings, which were rather tight when first assembled. Several tests were made to determine the power consumed revolving jackshaft and wheels at a motor speed of 1400 revolutions per minute.

The following are the figures on friction losses without load:

|                                                                                                                            | <u>WATTS</u> | <u>H.P.</u>        |
|----------------------------------------------------------------------------------------------------------------------------|--------------|--------------------|
| Motor running free at 1400 rev. per min.                                                                                   | 140          | or $\frac{1}{187}$ |
| " Jackshaft with solid pin chain (motor speed 1400 R.P.M.)                                                                 | 560          | " $\frac{.777}{}$  |
| Motor running jackshaft with roller chain (Motor speed 1400 R.P.M.)                                                        | 440          | " $\frac{.589}{}$  |
| Motor running jackshaft & drive wheels with solid pin chain on motor and roller chains on wheels (Motor speed 1400 R.P.M.) | 710          | " $\frac{.938}{}$  |
| Motor running jackshaft & drive wheels with roller chain on motor and wheels (motor speed 1400 R.P.M.)                     | 570          | " $\frac{.764}{}$  |

From the foregoing you will note that under the best condition (roller chain) there is 300 watts or .4 horse power lost between motor and jackshaft. Whether this loss is in the chain or in the jackshaft bearings we have yet to determine; at any rate it seems abnormal. The greater loss in solid pin chain showed up in three tests we have made and there must be more friction or drag on that type of chain.

The bearings on jackshaft were shifted about to find an easier running point, but the alignment made very little difference.

I don't believe that the Hyatt roller bearing will be suited for the wagon jackshaft. The jerky action of the chain at high speed and the tremendous momentary strains (in my opinion) squashes the springy roller and creates a momentary friction. Under such conditions I do not believe the "Hyatt" bearing is much ahead of a plain bearing.

Nov. 21, 1911

Watts per ton mile test in #2 Delivery Wagon  
with "shock-Proof" frame and ball bearing motor.  
16-A 8 "Edison" cells.

ROLLER CHAIN ON MOTOR

| <u>TOTAL WEIGHT<br/>INCLUDES DRIVER</u> | <u>AVERAGE VOLTS</u> | <u>AVERAGE<br/>AMPERES</u> | <u>MILES<br/>PR.HR.</u> | <u>WATTS PR.<br/>TON MILES</u> |
|-----------------------------------------|----------------------|----------------------------|-------------------------|--------------------------------|
| 1.495 tons<br>(800 lb. load)            | 18.79                | 121.07                     | 9.89                    | 153.79                         |

We started to tow wagon to course with full load in cells, intending to run gas voltage off near the course, but the tonneau would not pull us up the hills so we had to continue on our own power and make out test; this brought our running voltage down to 18.79.

Coming back about noon from the test course the wagon batteries were put on charge for a boost; the enclosing cover on battery box was not removed. The gases collected and pushed one of the taper plugs, which makes connection to cells, out, causing an arc which ignited the gases, exploded the battery box and demolished the roof of the wagon. The wagon will be in condition again to-morrow morning for the balance of tests to be made.

Nov. 24th, 1911.

#2 DELIVERY WAGON ENDURANCE TEST  
ON SHOCK-PROOF FRAME  
RUNS MADE OVER SELECTED COURSE

---

Four runs were made over the course, a total of sixty-eight miles; at the start of the fifth run, while coming down Cherry St. the front wheel of wagon struck a boulder measuring about 8 or 9" in diameter. The shock broke the angle iron frame from the rear axle and let the motor down to the ground. No damage was done to the running gear or motor.

The frame will be re-inforced at those points, and special attention will be paid to reducing the number of holes drilled through the angle iron.

Dec. 12th 1911

TRIAL RUN ON #2 DELIVERY WAGON  
WITH HEAVY ANGLE IRON SWIVEL FRAME

Ran wagon down to level course on Washington Ave., Newark, and took a watts per ton mile test. The roads going down were very heavy and, therefore, the test was made with a partially discharged battery.

The results are as follows:

| <u>TOTAL WEIGHT<br/>INCLUDING DRIVER</u> | <u>AVERAGE<br/>VOLTS</u> | <u>AVERAGE<br/>AMPERES</u> | <u>MILES<br/>PER HOUR</u> | <u>WATTS PER<br/>TON MILE</u> |
|------------------------------------------|--------------------------|----------------------------|---------------------------|-------------------------------|
| 2838.5 lbs.<br>(800 lb. load)            | 19.25                    | 85.24                      | 8.2                       | 141                           |

NOTE: -- This test was made with a 65 turn armature, which was put in motor to get a comparison.

| <u>the average volts</u> | <u>AVERAGE AMPS.</u> | <u>MIL.PR.HR.</u> | <u>WATTS PER TON MILE</u> |
|--------------------------|----------------------|-------------------|---------------------------|
| 18.79                    | 121.07               | 9.89              | 153.79                    |

The 33 turn armature test also had the advantage of good road conditions.

The 33 turn armature would be all right if it could be operated at very high speeds, but we are limited by chain losses due to high speed.

The 65 turn armature is best at very low speeds, about 400 or 500 R.P.M.; this slow speed cuts our power down too much; we are, therefore, completing a 51 turn armature wound with square wire, which will increase our section of copper considerably and raise the speed to working conditions. This armature will probably be done next week, at which time another watts per ton test will be taken. In the meantime we will start our regular endurance runs to test chassis, wheels, etc.

Dec. 13th, 1911.

The endurance runton #2 Delivery Wagon, with heavy frame, was started this morning, and out of six runs around the course, the wagon was stalled three times and had to be towed in.-- Even omitting the bad mud in Scotland Street, the runs could not be completed.

The reason for this poor showing may be due to a low percentage of potash solution in the battery. Mr. Smith is looking into the matter and will make a test on some of the cells.

The six runs made, total only 70.4 miles.

The front axle just outside the right hand spring is bent, and will have to be taken out and straightened. The axle will have to have still heavier re-inforcement at those points if it is to be made of Norway iron.

No bolts or nuts loosened or broke off from any part of wagon and equipment during the 70 miles of test.

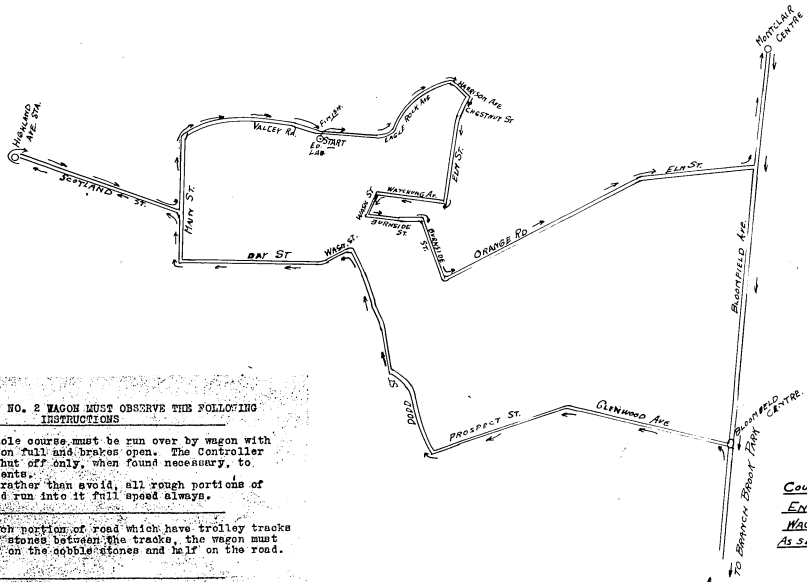
*The gears etc running free ~~on wagon~~  
takes 10 amperes, less than ~~the last~~ it did on the  
last frame. The current at some points in Scotland St.  
goes up to 450 amperes for a few seconds and  
300 ~~amp~~ over 300 amps for several minutes.*

December 28th, 1911.

ENDURANCE RUN ON #2 DELIVERY WAGON  
RUN OVER SPECIAL COURSE

Three runs were completed, a total mileage of 46.6. At the end of third run, the board to which front springs and axle is anchored, split. This strain is no doubt due to the front wheels striking a high cobble, which tends to stop the wagon and the inertia of the body heavily loaded which keeps on moving, thus straining the anchoring places.

Two tie rods (one on each side) will be run from rear axle to top of front spring to help hold the body from moving forward.



**DRIVERS OF NO. 2 WAGON MUST OBSERVE THE FOLLOWING INSTRUCTIONS**

The whole course must be run over by wagon with Controller on full and brakes open. The Controller should be shut off only when found necessary, to avoid accidents. Seek, rather than avoid, all rough portions of the road and run into it full speed always.

For such portion of road which have trolley tracks with cobble-stones between the tracks, the wagon must be run half on the cobble-stones and half on the road.

COURSE FOR  
ENDURANCE TEST.  
WAGON "E"  
AS SELECTED BY MR. EDISON.



**Edison General File Series  
1911. Battery, Storage - Delivery Wagons -  
Horse-Drawn Wagon Costs (E-11-13)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery and its use in lightweight electric delivery wagons. Included is data from a survey of the operating costs of horse-drawn delivery wagons, conducted under Edison's supervision by his assistant William H. Meadowcroft. Among the participants were Bloomingdale's, Borden's Condensed Milk Co., R. H. Macy & Co., and Saks & Co. in New York City; Abraham & Strauss in Brooklyn; and L. Bamberger & Co. and Hahne & Co. in Newark. Also included is a sample of the letters of introduction sent to would-be participants.

Less than 10 percent of the documents have been selected. The items not selected consist of duplicates, additional correspondence with participating firms, and questionnaires containing raw data.

Re: -

(7)

March 3, 1911.

C. Lambert, Esq.,  
Paterson, N. J.

My dear Mr. Lambert:

I am obtaining for Mr. Edison some data relating to the cost of operating and maintaining different classes of pleasure and family vehicles in various localities, including automobiles, gasoline and electric, and horses and carriages.

Knowing, as I do, that you use a team of horses and several horse-drawn vehicles, I have wondered whether you have been in the habit of keeping any account of their annual expense, and if so, whether you would be willing, or consider it too much of a bother to favor me with some figures showing approximately what it would cost to maintain such an equipment.

Mr. Edison's desire is to show, if possible, that the cost of maintaining and operating an electric vehicle for all family purposes will not exceed the expense of horses and carriage, while the possible mileage will be much greater. Hence, in showing comparative figures the first cost of the outfit is to be considered, with a percentage allowed for annual depreciation.

On the side of the electric he would also figure the cost of current for charging, the wages of a chauffeur, oil, repairs, new tires and repairs on old tires, and in fact all expenses that can be foreseen, including a liberal allowance for incidentals.

In the case of horses and carriage, besides considering a percentage for depreciation, his idea is to include wages of coachman and stableman, feed, hay, straw, shoeing, veterinary, repairs and renewals on harness or carriage, with an allowance for incidentals.

As you may surmise, Mr. Edison intends to use this information in a booklet which is being prepared for the benefit of persons considering the purchase of an elec-

C. Lambert, Esq.,  
Page -2-  
March 3rd, 1911.

tric vehicle. It is not his intention, however, to publish the names of those who have given him information, or data, so you may rest assured of its being regarded in a confidential light.

I know that you are a very busy man, and that I am taking a liberty in asking this information of you, so in case you feel in any way disinclined, or if you are too busy to furnish it, please do not hesitate to so advise me.

Yours very truly,

*Call Address "Edison, New York"*

*From the Laboratory  
of  
Thomas A. Edison,  
Orange, N. J.*

Gentlemen:-

I am developing a cheap and effective small electric delivery wagon, and desire to ascertain the actual costs of delivery by horse-drawn wagons.

My assistant, Mr. W. H. Meadowcroft, who will present this letter, has been sent by me to various concerns to ask for such costs and other data. The information thus obtained will be shown to you by my assistant, but without revealing names.

I am giving this general letter to Mr. Meadowcroft so that he can go ahead collecting this data so as to have it ready for me on my return from Europe. If you can see your way clear to furnish such costs, it would aid me greatly.

Yours very truly,

*Thomas A. Edison*

[ATTACHMENT/ENCLOSURE]

Call Address "Edison, N.Y. Works"

From the Laboratory  
of  
Thomas A. Edison,

How many single wagons?

How many double wagons?

" " horses, including extras?

Taking the store or other point as a centre, what is the average greatest radius of delivery per wagon?

How many deliveries will each wagon average per day?

Average distance covered per wagon per day?

Cost of wagon, single

" " " double

" " horse

" " harness, per set

Repairs per wagon per year

" " harness " "

Veterinary, per horse per month

Shoeing per horse per month

Stabling per month, per horse, including feed, bedding, etc.

Stablemen and helpers per year, (total)

Depreciation on wagon, per year

" " horse " "

" " harness " "

How often per day do wagons return to store for loading up?

How long a time is spent in loading?

About how many hours per day is taken for deliveries?

What is the weight of average load?

If practicable, please state annual rent of stable for horses only.

P. S. Waagso

July 26th, 1911.

John Claflin, Esq.,

New York.

Dear Mr. Claflin:

I am developing a cheap and effective small electric delivery wagon to take the place of the one horse delivery wagon.

In order to ascertain the conditions that are to be met I framed a list of questions relating to cost of horse delivery. I sent my assistant, Mr. W. H. Meadowcroft, with letters of introduction to a number of concerns in various lines of business, asking them to assist me by answering these questions, with the understanding that any information furnished would be regarded as strictly confidential.

Mr. Meadowcroft will present this letter and will show you a tabulation of the data thus far obtained, which has been furnished by all the concerns to whom I have applied except one.

In visiting some of the department stores in New York, Mr. Meadowcroft called at the O'Neill - Adams store, presented my letter and saw Mr. Mahne. He said that the trucking job that and some other stores controlled by the H. B. Claflin Co. was attended to under one department which was in charge of Mr. W. C. McGee to whom he gave my assistant a note of introduction.

Yesterday Mr. Meadowcroft called on Mr. McGee at the 17th St. stables and presented the letter. Mr. McGee looked at the questions and said "We will not furnish the information." and tore up the letter of introduction and threw it in the waste basket.

If Mr. McGee is an independent operator doing your delivery work under contract, I presume it is within his privilege to refuse information. If, however, he is simply in charge of delivery for your Company I don't suppose his decision would be final.

What I am aiming to do is to provide a more economical and satisfactory method of light delivery service, and it

John Claflin, Esq.

Page -2-

July 26th, 1911.

seems to me that the interests of the merchants and my own meet on mutual grounds. With this idea in mind I am asking a little cooperation in order that I may have a fair idea of the conditions which at present exist and which I hope to improve.

If, therefore, you are in sympathy with my object, and deem it proper to aid me, I shall be glad if you will kindly have the enclosed questions answered and the paper forwarded to me at Orange.

I am sorry to take up your time with such a long letter.

Yours very truly,

| Questions                                                   | Data on Horse Delivery Wagons |              |            |               |                |              |                                               |              |           |              |              |             |              |            |               |  |
|-------------------------------------------------------------|-------------------------------|--------------|------------|---------------|----------------|--------------|-----------------------------------------------|--------------|-----------|--------------|--------------|-------------|--------------|------------|---------------|--|
|                                                             | A                             | B            | C          | D             | E              | F            | G                                             | H            | I         | J            | K            | L           | M            | N          | O             |  |
|                                                             | Butcher                       | Grease       | Salmon     | Butcher       | Butcher        | Milk         | Dept. Store                                   | Milk         | Grease    | Dept. Store  | Dept. Store  | Dept. Store | Dept. Store  | Milk       | Dept. Store   |  |
| How many single wagons                                      | 6                             | 90           | 10         | 8             | 28             | 62           | 6                                             | 1234         | 7         | 52           | 18           | 38          | 30           | 11         | 18            |  |
| " " double                                                  | 10                            | 2            | 2          | 8             | 14             | 8            |                                               | 207          | 1         | 16           | 1            | 3           | 1            | 1          | —             |  |
| " " horses, including carted                                | 8                             | 135          | 16         | 34            | 75             | 86           | 8                                             | 1923         | 10        | 135          | 25           | 69          | 53           | 14         | 40            |  |
| What is radius of delivery per wagon, avg                   | 4 1/2 miles                   | 2 miles      | 2 miles    | 5 miles       | 4 to 5 miles   | 2 miles      | 4 miles                                       | avg. 1 mile  | 5 miles   | 4 to 5 miles | 4 to 5 miles | 7 miles     | 5 miles      | 4 miles    | 5 miles       |  |
| How many deliveries per wagon per day                       | 60                            | 60           | 75         | 50            | 60             | 150          | 120                                           | 225          | 50        | 160          | 80           | 176         | 100 to 125   | 250        | 125           |  |
| Average distance covered for wagon per day                  | 15 miles                      | 15 miles     | 16 miles   | 10 miles      | 10 to 15 miles | 20 miles     | 15 miles                                      | 8 miles      | 15 miles  | 20 miles     | 20 miles     | 17 miles    | 18 miles     | 12 miles   | 15 miles      |  |
| Cost of single wagons                                       | \$185                         | \$190        | \$300      | \$285         | \$275          | \$275        | \$225                                         | \$225        | \$150     | \$290        | \$250        | \$280       | \$300        | \$235      | \$400         |  |
| double                                                      |                               | \$250        | \$450      | \$225         | \$225          | \$200        | \$200                                         | \$225        | \$200     | \$325        | \$400        | \$280       | \$360        | \$235      | \$300         |  |
| horns                                                       | \$250                         | \$200        | \$200      | \$200         | \$210          | \$250        | Horns & harness<br>taken at \$77<br>per month | \$225        | \$225     | \$175        | \$200        | \$260       | \$300        | \$225      | \$300         |  |
| harness, for set                                            | \$45                          | \$45         | \$45       | \$30          | \$45           | \$45         |                                               | \$25         | \$22      | \$40         | \$45         | \$40        | \$45         | \$40       | \$70          |  |
| Repairs of wagon per year                                   | \$50                          | \$80         | \$100      | \$35          | \$50           | \$26         | \$25                                          | \$100        | \$75      | \$80         | \$100        | \$90        | \$125        | \$28       | \$60          |  |
| harness                                                     | \$8                           | \$10         | \$10       | \$7.50        | \$10.50        | \$12         |                                               | \$5          | \$10      | \$10         | \$15         | \$10        | \$10         | \$1        | \$10          |  |
| Veterinary for horse per month                              | 50 cents                      | 30 cents     | 60 cents   | 25 cents      | 50 cents       | 20 cents     |                                               | 25 cents     | \$1.75    | \$2.00       | \$1.00       | \$1.50      | 35 cents     | 25 cents   | 75 cents      |  |
| Shoeing                                                     | \$2.50                        | \$2.50       | \$3.00     | \$2.25        | \$2.50         | \$1.66       |                                               | \$1.75       | \$1.75    | \$1.75       | \$1.75       | \$2.50      | \$2.50       | \$2        | \$2           |  |
| Feeding                                                     | \$18                          | \$12.50      | \$15       | \$15.50       | \$12.75        | \$14         |                                               | \$15         | \$15      | \$12.50      | \$12.50      | \$11.50     | \$10 to \$11 | \$15       | \$11 to \$11  |  |
| Stabling per year                                           | \$720                         | \$720        | \$1320     | \$1950        | \$3000         | \$2000       |                                               | \$7000       | \$1850    | \$4000       | \$2300       | \$6200      | \$4250       | \$1144     | \$5800        |  |
| Depreciation on wagon                                       | 10%                           | 10%          | 20%        | 7 1/2%        | 12%            | 15%          | 15%                                           | 15%          | 15%       | 10%          | 10%          | 15%         | 20%          | 16 3/4%    | 6%            |  |
| horse                                                       | 10%                           | 10%          | 10%        | 13%           | 12%            | 10%          |                                               | 15%          | 10%       | 15%          | 20%          | 20%         | 20%          | 6%         | 20%           |  |
| harness                                                     | 20%                           | 25%          | 25%        | 7 1/2%        | 12%            | 15%          |                                               | 15%          | 10%       | 10%          | 5%           | 20%         | 20%          | 6%         | 25%           |  |
| How often per day do wagons return to store for loading up? | avg. 3 times                  | avg. 4 times | 3 times    | once or twice | once or twice  | Dept. return | once or twice                                 | Dept. return | 3 times   | 3 times      | 3 times      | Once        | Once         | Once       | Once          |  |
| How long a time is spent in loading?                        | 1/2 hour                      | 1 hour       | 15 minutes | 1 hour        | 1 1/2 hours    | 10 minutes   | 1/2 hour                                      | 5 minutes    | 1 hour    | 1 hour       | 20 minutes   | 45 mins     | 30 minutes   | 10 minutes | 1/2 to 1 hour |  |
| How many times per day is taken for deliveries?             | 7 to 8 times                  | 6 times      | 10 times   | 8 times       | 10 times       | 9 times      | 8 1/2 times                                   | 6 times      | 7 times   | 9 times      | 7 times      | 6 to 7 to 8 | 8 times      | 8 times    | 6 to 10 times |  |
| What is weight of average load?                             | 400 lbs                       | 600 lbs      | 500 lbs    | 1000 lbs      | 1500 lbs       | 1800 lbs     | 250 lbs                                       | 2000 lbs     | 1000 lbs  | 1800 lbs     | 400 lbs      | 700 lbs     | 400-500 lbs  | 2000 lbs   | 500 lbs       |  |
| Cost per delivery according to above figures                | 61 cents                      | 5.99 cents   | 5.13 cents | 6.2 cents     | 6.7 cents      | 2.61 cents   | 3.77 cents                                    | 1.6 cents    | 2.2 cents | 3.6 cents    | 5.7 cents    | 2.4 cents   | 3.64 cents   | 1.45 cents | 2.14 cents    |  |
| Expenses for horse per year (not including feed)            | \$121.00                      | \$115.00     | \$147.75   | \$111.25      | \$101.75       | \$219.22     | \$121.50                                      | \$103.50     | \$81.45   | \$120.00     | \$122.75     | \$121.75    | \$120.00     | \$125.20   | \$120.00      |  |
| Cost of spending wagon per year, including driver           | \$112.50                      | \$112.25     | \$170.45   | \$117.50      | \$109.00       | \$123.29     | \$42.75                                       | \$110.00     | \$125.72  | \$132.45     | \$122.75     | \$121.75    | \$120.00     | \$118.31   | \$122.75      |  |
| Percentage of return cost left                              | 32 1/2%                       | 12.62%       | 11.3%      | 41.7%         | 34%            | 9%           | 33 1/2%                                       | 16.1%        | 11%       | 60.71%       | 25%          | 56%         | 65.6%        | 2.8%       | 12.7%         |  |

[CONTINUED ON NEXT FRAME]





[ATTACHMENT/ENCLOSURE]

Key.

|                            |             |                         |                  |
|----------------------------|-------------|-------------------------|------------------|
| A - Varndell & Co.         | Orange      | Q. R. H. Macy & Co.     | New York         |
| B. C. M. Decker & Bros.    | "           | R. Aaron Ward & Sons    | Newark           |
| C. F. J. Pursell           | "           | S. Daniels Son's Sons   | New York         |
| D. Williams' Bakery        | Newark      | T. John Manamaker       | " "              |
| E. Mangels & Schmidt       | "           | U. Fleischmann's Bakery | " "              |
| F. Aldenay Dairy Co.       | "           | V. Huyler's             | " "              |
| G. David Straus & Co.      | "           | W. Koch                 | " "              |
| H. Borden Milk Co.         | New York    | X. Bloomingdale's       | " "              |
| I. S. Scheuer & Sons       | Newark      | Y. Abraham & Straus     | Brooklyn         |
| J. Habner's                | "           | Z. McCreary & Co.       | Pittsburgh       |
| K. Snyder's & Goerke's     | "           | AA Joslin Dry Goods Co. | Denver           |
| L. Bamberger's             | "           | BB Montgomery Fair      | Montgomery, Ala. |
| M. L. S. Plant & Co.       | "           |                         |                  |
| N. Roseland Dairy          | East Orange |                         |                  |
| O. Saks & Co.              | New York    |                         |                  |
| P. Acker, Menzies & Condit | " "         |                         |                  |

**Edison General File Series  
1911. Battery, Storage - Delivery Wagons -  
Lansden Company (E-11-14)**

This folder contains correspondence and other documents relating to the business of the Lansden Co., a manufacturer of electric wagons in which Edison had a controlling interest. Included are expense and revenue statements, along with inquiries regarding employment, sales agencies, and customer relations. Some of the letters mention the resignation of general manager John M. Lansden, Jr., and his efforts to establish a new company called the John M. Lansden Manufacturing Co. The correspondents include Frank L. Dyer, president of Thomas A. Edison, Inc., and vice president of the Edison Storage Battery Co.; Robert A. Bachman, master machinist at the West Orange laboratory; W. E. Eldridge, owner of the Electric Wagon Co. in Boston; Ira M. Miller, Edison's brother-in-law; and John H. Vail, former chief engineer of the Edison Electric Light Co.

Approximately 60 percent of the documents have been selected. The material not selected includes an compilation of unidentified expenses covering the period 1888-1890.

Auto - London

VARIOUS TYPES FOR COMMERCIAL  
AND PASSENGER SERVICE. THE  
EDISON STORAGE BATTERY EQUIPMENT

## The Lansden Company

### Electric Wagons

54 & 56 Lackawanna Avenue

Newark, N. J. January 9th, 1911.

FACTORY TELEPHONE :  
310 BRANCH BROOK  
SALES OFFICE TELEPHONE :  
196-197 BRANCH BROOK

Mr. H.F. Miller, Auditor.

Dear Sir:

Referring to telephone communication of the 7th inst., we are enclosing herewith summary of total amount of expenditures, also summary of total amount of anticipated receipts together with recapitulation showing that our cash requirements for the balance of the month ending January 31st, 1911 will amount to \$11000.00 over and above the \$6000.00 which we are to receive to-morrow the 10th inst., \$5000.00 of which is required at once, \$5000.00 on the 20th inst. and the balance, \$3000.00 on the 31st inst.

Trusting you will give this matter your immediate attention for which we thank you in advance, we remain,

Yours very truly,

THE LANSDEN COMPANY

Per



Treas.

GSF/DA

[ATTACHMENT/ENCLOSURE]

SUMMARY OF CASH DISBURSEMENTS FOR THE MONTH ENDING JAN. 31st, 1911.

|                                             |                |
|---------------------------------------------|----------------|
| Acme Drill Co.                              | 2.58           |
| The Berger Manufacturing Co.                | 108.15         |
| The Barlow Foundry Co.                      | 45.12          |
| Baldwin Chain & Mfg. Co.                    | 300.00         |
| Bettes & Ebsen                              | 5.30           |
| Briscoe Mfg. Co.                            | 47.25          |
| The Billings & Spencer Co.                  | 146.20         |
| Brown-Lipe Gear Co.                         | 342.40         |
| Edward V. Brokaw & Bro.                     | 16.25          |
| Cary Spring Works                           | 45.00          |
| The W.T. Crane Carriage Hardware Co.        | 344.82         |
| James A. Coe & Co.                          | 4.15           |
| The Crosby Company                          | 10.80          |
| Department of Water                         | 75.00 approx.  |
| Diamond Rubber Co.                          | 6.10           |
| Driver-Harris Wire Co.                      | 17.66          |
| Electric Motor & Equipment Co.              | 41.39          |
| The Electric Welding Products Co.           | 89.66          |
| Joseph P. Eberhard & Son Inc.               | 17.34          |
| Edison Storage Battery Co.                  | 4153.18        |
| Empire Auto Supply Co.                      | 7.81           |
| The English & Mergsick Co.                  | 12.90          |
| Faitoute Iron & Steel Company               | 236.21         |
| Peter A. Frasse & Co.                       | 201.42         |
| The Firestone Tire & Rubber Co.             | 749.51         |
| Freight Handlers' & Railway Clerks' Journal | 15.00          |
| General Electric Company                    | 5554.52        |
| C. A. Goldsmith                             | 277.20         |
| The Goodyear Tire & Rubber Co.              | 544.72         |
| The Halle Bros. Co.                         | 18.75          |
| Edmund F. Heath & Son                       | 73.33          |
| George Healy                                | 3.90           |
| The Hess-Bright Manufacturing Co.           | 36.10          |
| S. B. Howard                                | 170.00         |
| T. P. Howell & Co.                          | 157.42         |
| U.T. Hungerford Brass & Copper Co.          | 30.53          |
| Hyatt Roller Bearing Company                | 20.40          |
| J.J. Hookenjos Co.                          | 5.55           |
| Industrial Wire & Metal Works               | 77.50          |
| International Engineering Co.               | 9.88           |
| International Time Recording Co.            | 2.00           |
| H. A. Jaeger                                | 6.00           |
| Phineas Jones & Co.                         | 21.85          |
| William A. Jones & Son                      | 121.40         |
| W. H. Kemp Co.                              | 17.40          |
| Kauffel & Esser Co.                         | 15.70          |
| The Kuebler Foundries Inc.                  | 462.20         |
| Lebanon Steel Casting Company               | 549.24         |
| Ludlow & Squier                             | 34.20          |
| Lybrand, Ross Bros. & Montgomery            | 103.14         |
| Manhattan Electrical Supply Co.             | 9.49           |
| Massachusetts Chemical Co.                  | 15.00          |
| Murphy Varnish Company                      | 48.79          |
| Nank Clock Company                          | 2.60           |
| The New Departure Mfg. Co.                  | 20.30          |
| New York Telephone Co.                      | 67.30          |
| The National Saw Company                    | 8.77           |
| Newark Glass Co.                            | 35.28          |
| New York Transportation Co.                 | 119.09         |
| Eugene B. Nice                              | 8.14           |
| The Neera Manufacturing Company             | 5.50           |
| Charles R. Partridge Lumber Co.             | 175.88         |
| Public Service Electric Company             | 325.00 approx. |

CARRIED FORWARD----- \$15992.25

[ATTACHMENT/ENCLOSURE]

|                                          |                  |                  |
|------------------------------------------|------------------|------------------|
|                                          | Brought Forward- | 15992.25         |
| Public Service Gas Company               |                  | 59.27            |
| W. Peterson                              |                  | 88.58            |
| Rising & Thorne                          |                  | 8.58             |
| Roe & Conover                            |                  | 195.42           |
| Royal Ribbon & Carbon Co.                |                  | 29.29            |
| R. E. Rodriguez                          |                  | 3.60             |
| Saugamo Electric Company                 |                  | 432.00           |
| Shaw & Potter                            |                  | 27.10            |
| Singer Sewing Machine Company            |                  | 5.89             |
| Standard Oil Co.                         |                  | 9.41             |
| Thomas A. Sanford Co.                    |                  | 3.06             |
| The Standard Welding Co.                 |                  | 9.00             |
| Spring Perch Company                     |                  | 492.10           |
| The Schwarz Wheel Company                |                  | 525.18           |
| The Scoville & Cook Co.                  |                  | 10.50            |
| J. H. Sliker                             |                  | 8.25             |
| Frederick N. Sommer                      |                  | 2.70             |
| The Tea Tray Co. of Newark, N. J.        |                  | 6.71             |
| Talar, Hart & Co.                        |                  | 41.20            |
| United Manufacturers                     |                  | 3.38             |
| The Veeder Manufacturing Co.             |                  | 131.85           |
| O. T. Vogeler & Son                      |                  | 11.71            |
| The Wagner-Field Co.                     |                  | 988.00           |
| The Whitney Mfg. Co.                     |                  | 425.21           |
| Magnus Wilson Company                    |                  | 332.44           |
| Joel H. Woodman                          |                  | 217.33           |
| Orlando W. Young                         |                  | 3.48             |
| Estimated Pay Roll for January 20th      |                  | 2500.00          |
| Estimated Salaries for January 31st      |                  | 4200.00          |
| Estimated Petty Cash Expenditures        |                  | 1500.00          |
| TOTAL ESTIMATED AMOUNT OF EXPENDITURES-- |                  | <u>328265.43</u> |

[ATTACHMENT/ENCLOSURE]

SUMMARY OF ANTICIPATED RECEIPTS FOR MONTH ENDING JANUARY 31st, 1911.

|                                           |            |
|-------------------------------------------|------------|
| Abraham & Straus                          | 38.01      |
| The Acme Garage                           | 8.85       |
| Adams Express Company                     | 39.90      |
| Adams Vehicle Company                     | 1540.73    |
| The Arlington Company                     | 3.00       |
| Bellevue & Allied Hospitals               | 1.50       |
| California Electric Garage Co.            | 2.85       |
| Chamberlin Auto Company                   | 27.55      |
| Carow Manufacturing Co.                   | 6.00       |
| Columbia Storage Warehouses               | 3.60       |
| Edison Chemical Works                     | 70.64      |
| Edison Phonograph Works                   | 27.67      |
| Fairfield Dairy Co.                       | 53.20      |
| Federal Storage Battery Car Co.           | 18.55      |
| Firestone Tire & Rubber Co.               | .76        |
| Robert Car Company                        | 10.00      |
| Green Car Sight Seeing Co.                | 7.25       |
| Hamburg-American Line                     | 59.55      |
| A. G. Hyde & Sons                         | 14.15      |
| R. H. Macy & Co.                          | 319.11     |
| Mandel Brothers                           | 2000.00    |
| John G. Myers Co.                         | 4.50       |
| F. J. Newcomb Manufacturing Co.           | 8.00       |
| New York Telephone Company                | 15.45      |
| New York Transportation Company           | 11.50      |
| New York & Springfield Despatch           | 19.16      |
| Sigle Cooper Co.                          | 28.05      |
| Julian L. Street,                         | 60.60      |
| J. H. Small & Sons                        | 3100.00    |
| Spaulding & Company                       | 135.00     |
| Steinway & Sons                           | 61.01      |
| Oscar Tamms                               | 95.10      |
| United States Express Company             | 22.80      |
| Wells Fargo & Company Express             | 186.13     |
| The Williams Printing Company             | 3252.25    |
| Winchester Repeating Arms Co.             | 34.50      |
| Wright-Dickinson Hotel Company            | 3500.00*   |
| TOTAL AMOUNT OF ANTICIPATED RECEIPTS----- | \$14766.52 |

RECAPITULATION

The Bank Balance will be after we receive the \$6000.00  
 check to-morrow, January 10th, 1911-- \$3489.27  
 Total amount of anticipated receipts 14766.52  
 Total estimated amount of expenditures \$28265.43  
 Total amount of cash required for bal-  
 ance of month ending January 31st, 1911,  
 exclusive of the \$6000.00 to-morrow 10009.64  
 \$28265.43 \$28265.43

NOTE:-

The above estimate is based on the assumption that we receive the Wright-Dickinson Hotel Company's check of \$3500.00\* (which is more or less doubtful, also does not make any provision for carrying any bank balance which should be at least \$1000.00, making the total amount of cash about \$11000.00 providing we get the above mentioned check.

Amount of cash required at once-- \$5000.00  
 Amount of cash required 20th inst. 3000.00  
 Amount of cash required 31st inst. 3000.00  
 \$11000.00

[ATTACHMENT/ENCLOSURE]

VARIOUS TYPES FOR COMMERCIAL  
AND PASSENGER SERVICE. THE  
NISON STORAGE BATTERY EQUIPMENT

*Auto-Lansden*

The Lansden Company

Electric Wagons

54 & 56 Lackawanna Avenue

Newark, N. J. December 14, 1910.

FACTORY TELEPHONE: 42  
42 BRANCH BRIDGE  
SALES OFFICE TELEPHONE: 106  
106 107 BRANCH BRIDGE

*Denny*

Mr. Lansden:

Inasmuch as we have been making up parts at a rate in excess of the sales and deliveries, it will be necessary to settle our accounts payable on the basis outlined herein, in order to maintain present credits.

Operating conditions and the delay on battery deliveries have prevented the shipment of a number of wagons that could have been realized upon before this time.

As you will note, we now have on hand and in stock, materials and supplies, orders in process and machines representing a total outlay of about \$140,000. The disposition at the indicated selling rate will more than offset our net condition.

Our cash requirements for this month will be about \$21000, and attached are the summaries showing the total amount to be paid in December, which is \$33545.64 and also total amount of anticipated receipts, which is \$12692.53, based on the assumption that we receive the Olds Wortman & King, which of course is more or less doubtful on account of the distance the cars will have to travel before arriving at their destination: The difference being, between the total amount to be paid and the anticipated receipts, the amount of \$20861.11, as shown by summary at bottom of one of the enclosed sheets.



[ATTACHMENT/ENCLOSURE]

SHEET 2

Mr. Lansden

12/14/10.

We are in immediate need of at least \$10000 with which to meet obligations promised for payment on Thursday, 15th inst., \$5000 on or about the 22nd inst. and the balance at the close of the month.

*George S. Freeman*

[ATTACHMENT/ENCLOSURE]

|                                     |         |
|-------------------------------------|---------|
| Acme Drill Co., Inc.                | 6.78    |
| Acme Drill Co.                      | 8.19    |
| Albert & J.M. Anderson Mfg. Co.     | 192.50  |
| Baader, Adamson & Co.               | 77.00   |
| Baker Printing Co.                  | 6.15    |
| Boston Electric Garage Co.          | 81.85   |
| Banister & Pollard Co.              | 23.27   |
| The Barlow Foundry Co.              | 223.33  |
| Baldwin Chain & Mfg. Co.            | 401.50  |
| Bowen Mfg. Co.                      | 64.25   |
| Briscoe Mfg. Co.                    | 23.50   |
| The Billings & Spencer Co.          | 207.05  |
| Brown-Lipe Gear Co.                 | 772.02  |
| John Boyle & Co. Inc.               | 37.44   |
| Edward V. Brockaw & Bro.            | 48.75   |
| Cammell Laird & Co. Limited         | 2.25    |
| The Carborundum Company             | 22.33   |
| Gary Spring Works                   | 11.55   |
| Carter White Lead Company           | 36.25   |
| The Cincinnati Ball Crank Company   | 14.40   |
| The Critchley Machine Screw Company | 25.00   |
| Centaur Motor Company               | 43.50   |
| Continental Fibre Company           | 12.02   |
| Commercial Photo Co.                | 9.70    |
| Albert C. Courter & Co.             | 13.04   |
| G. Cowles & Co.                     | 158.12  |
| Peter Copper's Glue Factory         | 15.00   |
| E. L. Cottell, Inc.                 | 6.50    |
| Department of Water                 | 66.13   |
| DeForge Belting Company             | 9.01    |
| John Desch                          | 145.00  |
| DeVoursney Bro's                    | .50     |
| R. E. Datts Company                 | 9.50    |
| Driver-Harris Wire Co.              | 75.57   |
| William H. Edwards                  | 250.80  |
| The Electro-Dynamic Company         | 2.54    |
| The English & Mersick Co.           | 38.94   |
| The Fairbanks Company               | 77.00   |
| Faitoute Iron & Steel Company       | 467.12  |
| Peter A. Frasse & Co.               | 98.25   |
| General Electric Company            | 7018.99 |
| C. A. Goldsmith                     | 976.74  |
| Grabe-McGovern Company              | 105.25  |
| Hardinge Bro's                      | 2.54    |
| Edmund F. Heath & Son               | 350.99  |
| George Healy                        | 7.25    |
| Heller Brothers Company             | 33.85   |
| S. Hoffnung & Co. Limited           | 5.58    |
| The F.W. Horstmann Co.              | 46.80   |
| Homar Brass Works                   | 517.65  |
| T.P. Howell & Co.                   | 63.30   |
| U.T. Hungerford Brass & Copper Co.  | 130.07  |
| Industrial Wire & Metal Works       | 57.55   |
| Phineas Jones & Co.                 | 15.00   |
| Jones & Lanson Machine Co.          | 65.00   |
| William A. Jones & Son              | 755.68  |
| Keuffel & Esser Co.                 | 34.34   |
| The Kuebler Foundries Inc.          | 481.12  |
| Lebanon Steel Casting Company       | 1172.22 |
| Ludlow & Squier                     | 13.77   |
| Lybford, Ross Bro's & Montgomery    | 102.40  |
| The E.R. Merrill Spring Co.         | 55.40   |
| Michelin Fire Company               | 86.07   |
| Miller & Company                    | 324.53  |
| The Millers Falls Company           | .25     |
| Murphy Varnish Company              | 304.15  |
| Motor                               | 9.00    |
| The National Lock Washer Co.        | 39.28   |

Carried Forward ----- \$ 16353.58

[ATTACHMENT/ENCLOSURE]

|                                              |            |
|----------------------------------------------|------------|
| Brought Forward                              | \$16353.58 |
| Newark Gear Cutting Machine Co.              | 14.10      |
| NewYork Telephone Co.                        | 57.55      |
| The National Saw Company                     | 27.53      |
| Newark Glass Co.                             | 19.64      |
| New York Transportation Co.                  | 105.65     |
| Newark Glass Depot                           | 5.90       |
| The Pantasote Company                        | 58.75      |
| Charles R. Partridge Lumber Co.              | 914.72     |
| Patriarche & Bell                            | 23.23      |
| Public Service Electric Company              | 334.72     |
| W. Peterson                                  | 143.51     |
| The Power Wagon                              | 2.00       |
| Radium Steel Company                         | 4.75       |
| Rising & Thorne                              | 89.85      |
| Roe & Conover                                | 718.70     |
| Robert L. Ross, Receiver 1st Taxing District | 289.50     |
| Rogers & Company                             | 803.25     |
| R. E. Rodriguez                              | 55.05      |
| Sangamo Electric Company                     | 549.00     |
| Searls Manufacturing Co.                     | 2.85       |
| D. F. Segelke                                | 30.80      |
| Shaw & Pette                                 | 6.95       |
| Singer Sewing Machine Company                | 4.29       |
| Standard Oil Co.                             | 29.00      |
| Standard Roller Bearing Co.                  | 4.08       |
| Strieby & Poote Co.                          | 43.05      |
| Spring Perch Company                         | 712.28     |
| The H. D. Smith & Co.                        | 21.25      |
| The Schwarz Wheel Company                    | 464.31     |
| Frederick M. Sommer                          | 10.91      |
| S. A. Stephens                               | 15.25      |
| H. G. Shepard & Sons                         | 55.00      |
| Cornelius Ten Bick                           | 8.12       |
| Trenton Spring Mattress Company              | 5.00       |
| Irving Underhill                             | 15.30      |
| United Manufacturers                         | 4.88       |
| United States McAdamite Metal Co.            | 8.06       |
| The Veeder Mfg. Co.                          | 160.69     |
| O. T. Vogeler & Son                          | 23.21      |
| The Wagner-Wield Co.                         | 1123.43    |
| The Western Union Telegraph Company          | 1.28       |
| Weston Electrical Instrument Company         | 4.77       |
| W. A. Whitney Manufacturing Company          | 24.00      |
| The Whitney Mfg. Co.                         | 393.43     |
| Magnus Wilson Company                        | 593.75     |
| Yale-Princeton Official Souvenir Program     | 20.00      |
| Orlando W. Young                             | 7.02       |
| Madison Square Garden Co.                    | 1449.00    |
| S. A. Miles                                  | 515.60     |
| Estimated Pay-Roll Due December 23rd, 1910   | 2700.00    |
| Estimated Salaries Due December 31st, 1910   | 3800.00    |
| Estimated Incidental Expenses                | 500.00     |
| Total Amount to be paid in December--        | \$33543.64 |

[ATTACHMENT/ENCLOSURE]

|                                              |               |                   |
|----------------------------------------------|---------------|-------------------|
| Abraham & Straus                             |               | 62.96             |
| Adams Express Company                        |               | 53.40             |
| The Arlington Company                        |               | 21.21             |
| Commonwealth Edison Company                  |               | 38.60             |
| E. J. Bavern                                 |               | 32.35             |
| Edison Chemical Works                        |               | 52.74             |
| Edison Electric Illuminating Co. of Brooklyn |               | 25.13             |
| Edison Phonograph Works                      |               | 595.78            |
| Firestone Tire & Rubber Company              |               | 298.61            |
| Globe Storage & Carpet Cleaning Company      |               | 9.30              |
| The Halle Brothers Company                   |               | 206.27            |
| James A. Hearn & Son                         |               | 2598.05           |
| Lewandos French Dyeing & Cleansing Company   |               | 10.00             |
| John G. Myers Co.                            |               | 41.77             |
| F. J. Newcomb Mfg. Co.                       |               | 31.15             |
| New York Telephons Co.                       |               | 13.94             |
| New York Transportation Co.                  |               | 8.50              |
| Olds Wortmann & King                         | \$6100.00     |                   |
| * Less commission                            | <u>610.00</u> | 5490.00*          |
| The Presbyterian Hospital                    |               | 42.95             |
| Rochester Railway & Light Co.                |               | 2.75              |
| Siegel Cooper Company                        |               | 12.90             |
| Oscar Tamm                                   |               | 95.10             |
| Wells Fargo & Company, Express               |               | 2939.07           |
| Total Amount of Anticipated Receipts         | -----         | <u>\$12682.53</u> |

\* S U M M A R Y

Total Amount to be paid in December 1910-- \$23543.64

Total Amount of Anticipated Receipts----- 12682.53

Total Amount of Cash required for month-----\$20861.11

\*NOTE:-

The Above figures are based on the assumption that we receive the check from Olds Wortman & King which however is more or less doubtful owing to the fact that the cars representing this amount are on their way to Portland, Oregon which will take considerable time before they arrive at their destination.

Auto-Lantern  
VARIOUS TYPES FOR COMMERCIAL  
AND PASSENGER SERVICE. THE  
UNION STORAGE BATTERY EQUIPMENT

## The Lansden Company

### Electric Wagons

54 & 56 Lackawanna Avenue

Newark, N. J. January 16, 1911.

FACTORY TELEPHONE: 840  
BRANCH BROOK  
SALES OFFICE TELEPHONE: 100  
BRANCH BROOK

Mr. H.F. Miller, Auditor,  
The Lansden Company,  
Orange, N. J.

Dear Mr. Miller:

In compliance with your request of the 14th inst., you will find enclosed herewith statement of sales for the six months of June, July, August, September, October and November, also separate sheet showing the date when the various salesmen were hired.

Yours very truly,

THE LANSDEN COMPANY

For

*George S. Thurman*

Treas.

GSF/DA

Mr Edison Ed. Edison Post. 5/17/11

Here is an old account on your books against Lansden  
It happened before my time Every time I spoke to Lansden  
about it he said he would take it up with you.  
George Meister says it was for repairs to the first  
machine bought from Lansden. It came from ~~Alabama~~  
Alabama. George thinks it should be charged to  
General Expense Lansden said yesterday you  
should stand it. However he has another months salary  
coming so we have a hold on him.

H. Y. M.

<sup>London</sup>  
Fred Kimball  
% Genl Electric Co.  
State St. Boston, Mass

May 19 - 1911

Why dont your people answer Laiden  
Company telegrams about motors. Urquently needed  
their cancellation of orders

Thos. A Edison

Sept 11<sup>th</sup> 1911

honsden



JAMES R. KEISER INC.  
FOURTH AVENUE  
TWENTY-SEVENTH TO TWENTY-EIGHTH STREETS  
NEW YORK

JAMES R. KEISER, PRESIDENT  
CHAS. BUSTON, JR., VICE PRESIDENT  
WILLIAM L. SMITH, TREASURER  
HOWARD H. BROWN, SECRETARY

Mr. Thomas R. Edison  
West Orange N.J.

May 29-11

~~1911~~ JUN 1 - 1911 *Recd 6/1/11*

Dear Sir, I understand that Mr. Lamden some time since resigned his position and that you personally are reorganizing the Keiser Co. Nevertheless it seems to me probable that you are not aware of all the conditions that now obtain there, and as I have been unable to get any satisfaction from the Co. I address this letter to you and if the matter at issue is not one for your personal attention, I should be glad to be put in communication with some responsible person who knows some thing about the matter, which is a touring automobile I and will be distinct under standing that del; to made in April. It was definitely promised for Apr 15-20 but as I thought there might be some unexpected delay in making the body which was of special design, I myself suggested that in the contract May 1 be nearest is the final date. The statement was made that there need or no



delay on the chassis as that was practically the same as the 6  
was turning out right along. As a matter of fact the body has  
been waiting for the chassis for about a month or more.  
My grievance is this. The factory has stated over & over again  
that the chassis was just about ready to <sup>go to</sup> New Haven. Instead  
of bluntly admitting the truth in a straight-forward way that the  
car would not be offered for acceptance until some 2 mos. after  
date promised. Had the matter <sup>not</sup> been humbugged along from week  
to week in this way I might perhaps have made other arrangements  
as the car was ordered for a specific purpose and the loss of  
about 1/3 of the whole season in the country will have occurred  
before it is ready. My family have been very much disappointed.  
None of my friends experiment in cars approved of my exper-  
imenting in a touring car costing several thousand dollars, par-  
ticularly as my country place is at Huntington L. I. a section  
of hills. Nevertheless as I had a great deal of confidence in  
Mr. Carsorn - both personally & for his knowledge of the  
possibilities involved, I gave the order and there were a  
good many points that were left entirely to him. As he  
has been out some time it would seem to have been quite



JAMES R. KEISER INC.  
FOURTH AVENUE  
TWENTY-SEVENTH TO TWENTY-EIGHTH STREETS  
NEW YORK

JAMES R. KEISER, President  
CHAS. HUSTON, JR., Vice President  
WILLIAM L. SMITH, Treasurer  
HOWARD WALBRID, Secretary

quite proper and businesslike for some one to have seen me who was competent to give some information. After many inquiries for the car I finally got word that some one would call the following morning early. I waited till 11.45 A.M. & then had to go out and the gentleman came during my absence and left word that the delay was due to reorganization. Still of course was no satisfaction to me, as there are a number of points on which I would like definite information before deciding what I will do in this connection. Frankly the only conclusion I can draw from the discrepancies between the statements made from time to time and the facts, is that this job has been neglected in favor of others where the customers were insistent.

Yours Very Truly *James R. Keiser. (over)*

6/2/50 Mrs Donovan says  
"to be delivered with the baby"  
New Haven to at June 2<sup>nd</sup>



D

Grants

J. H. VAIL  
MECHANICAL AND ELECTRICAL ENGINEER  
ELECTRIC RAILWAY LIGHTING AND  
POWER EXPERTS  
817 HILLSIDE AVE.

Friend Vail

Have already made arrangements  
for New York, N. J. & Philadelphia  
Mr. T. A. Edison can do nothing at  
Orange N. J. present

JUN 5 - 1911

Ans 67

Dear Mr Edison:

I have been informed somewhat  
about present conditions at the Hudson  
Co.

In selling G. V. Electric I am right on  
the "firing line" all the time, and know the  
field for future business.

I am in touch with, and know the  
attitude and requirements of the Central Sta-  
tions, also of the Business Public.

I know what is needed to develop  
Electric Vehicle business far beyond present  
conditions. The surface has only been scratched.

If you will place me in the General  
Management of the Co. to build & sell wag-  
ons, using your batteries, and give me full  
support morally and financially I can  
make it a big success. Then if you don't  
want to keep it I can find parties to  
buy out the Co.

Yours very truly  
J. H. Vail

Auto-Lansden

*M. E. Schmitt  
This is a fine  
wagon in condition &  
keep it up under  
Wagon*

8981  
6.15



# LANSDEN ELECTRIC WAGONS



One of 8 Lansdens in  
Aiken's Service



One of 29 Lansdens in  
Hearn's Service



One of 18 Lansdens in  
Macy's Service



One of 10 Lansdens in  
Abraham and Straw's Service

Perhaps you do not know that the ton-mile operating cost of electric commercial vehicles is far less than that of gasoline vehicles—to say nothing of the fact that the maintenance and repair cost is only a fraction of that of the gasoline car.

Perhaps you do not know that the chances are about five to one that your hauling requires electrics rather than gasoline vehicles.

Perhaps you do not know that the operating and maintenance cost of Lansden Electric Wagons is the lowest yet reached by any commercial vehicle.

Perhaps you do not know that some of these Lansden Wagons have been in service more than seven years, and are operating today on their original Edison Storage Battery equipment.

We have specific information which you ought to have. We will send it or bring it, if you'll phone or write.

The Lansden Co., 233-235 High St., Newark, N. J.



One of 102 Lansdens in  
Adams Express Service



One of 4 Lansdens in  
Steinway's Service

Mr. Edison

April

I send this letter to Hallam  
today. It has been your gift.

Sorry not to have heard  
from Lausden & before  
making this for postage  
but could not reach him

Ed M.

[ATTACHMENT/ENCLOSURE]

VARIOUS TYPES FOR COMMERCIAL AND PASSENGER SERVICE. THE EDISON STORAGE BATTERY EQUIPMENT

*London*

THE LANSDEN CO.  
NEWARK, N. J.

Electric Wagons

1634 WALNUT AVENUE  
CLEVELAND, OHIO

S. R. BAILEY & CO.  
ANDOVER, MASS.

IRA H. MILLER

June 21 1911

TELEPHONE NORTH 200

The Halle Bros Co.

City  
Halle Bros Co.

Dear Sir:-

*Also  
June 26<sup>th</sup> 1911  
JH 23 911*

Permit me to submit to you the following suggestions, which if accepted by you, I will agree to put into contract form with a Stock Company and proper guarantee of faithful performance of such contract.

- 1 st. You are to purchase and pay for 4 Lansden Wagons 1000 lb. capacity with 60 A 6 Batteries as may be later agreed between us.
- 2 nd. You are then to turn over such 4 Wagons together with 5 Lansden Wagons now owned by you ( to be in good condition) to a Stock Company to be formed by me with the understanding that such Company will under-take and will take care of such 9 Lansden Wagons as follows, Furnish Garage, Electricity for daily runs (35 miles for A 4 Battery Cars) and (50 miles for A6 Battery Cars) Tires, Painting, Repairs, Electrician, Drivers, and Insurance for a period of Five Years from September 1st 1911.
- 3rd. You are to pay for such service above mentioned the sum of \$235.00 per month (26 days), per Wagon and make such payments the 5th of each month following the month in which service was rendered.
- 4 th. You are to have monthly access to Company's Records of your service and if there is an excess of charge at end of each year after allowing 10% of operating cost to the Company the same is to revert back to The Halle Bros Co.

Respectfully Submitted  
Yours Very Truly

*Gary*

*If you manage it right  
you can make money on  
this deal*  
*J. A. Edson*

*26 | 236-19  
239*

Mr Dyer

Here is report  
of Bradstreet on Lousden  
for your information  
Mr Edison has seen it.

H. J. M.

~~W. J. Miller~~



[ATTACHMENT/ENCLOSURE]

29-6-27-11-11-11  
LANSDEN JOHN M. JR. .... NEWARK, N. J.  
Age about 40, married. 467 Broad St.

At above address June 27, 1911 Geo. S. Freeman stated to your reporter in substance as follows:  
"Mr. Lansden is on Jury duty in New York and will not be here this week. Some time after the first of July we will probably incorporate. We will not incorporate as The Lansden Co., but probably as the John M. Lansden Mfg. Co., who will manufacture an electric truck on a new design but we will probably take a composite name as the Lansden Truck, but we will probably take a composite name for it. I was formerly Treasurer of The Lansden Co. Associated with Mr. Lansden in his new venture are the following men, who were all connected with the Lansden Co; Carl L. Mergan, who was sales manager, Frank A. Whitten, sales-engineer and Cecil M. Billings his Assistant. We have been looking for a factory site, but have not found one as yet. We do not expect to interfere with the workings of the old company and we are in harmony with the management of The Lansden Co."

John M. Lansden Jr. started in this line a number of years ago. Associated with him was his brother, David S. Lansden. A corporation under the name of The Lansden Co. was formed April 27, 1904 with an authorized capital \$30,000, full amount claimed paid in. Of that concern David S. Lansden was president and John M. Lansden Jr. Vice-President. The controlling interest in the corporation was subsequently acquired by others and David S. Lansden resigned, Frank L. Mergan being elected to succeed him. June 1, 1911 John M. Lansden Jr. resigned from the company and it is understood he is about to incorporate a new concern to manufacture commercial trucks. It is understood that George S. Freeman formerly Treasurer of the Lansden Co. will be associated with him, as well as a number of other employees of that concern. Lansden is considered a capable mechanic, said thoroughly familiar with the details of the automobile truck manufacturing business, but is considered of only ordinary executive ability. He is said to have been in receipt of a good salary, but is generally regarded as being of small means. He is well regarded personally and it is thought he would not contract beyond his ability to pay.

61-36.....No.....June 27, 1911



*sent to  
Lansden*

**PRESIDENT'S OFFICE**  
Memorandum

1839

*File*

July 5, 1911.

Mr. H. F. Miller:

I return herewith commercial report on Mr. Lansden. I do not see how there could be any objection to the corporate name of "John M. Lansden Mfg. Co." As soon as you can ascertain the design of their proposed truck and the name they intend to call it, I wish you would let me know, because if anything in the way of unfair competition develops we want to be prepared to move quickly.

FED/IWW  
Enc-

F. L. D. *Anger*

*Aut - Lansden*

July 15, 1911.

Mr. Edison:

I thought probably you wanted to make a barrel of money, so I cut this clipping from the Newark Evening News. I am getting a disinterested party to write News Office Box 75 to find out full particulars. In all appearances this is the new Lansden Company. It might possibly be, as you stated, that the angel has not yet appeared.

*Bachman*

*Chas. S. Soden*

**FILE**

*[Handwritten signature]*

July 19, 1911.

Mr. Edison:

Replying to your memo; we are plating the strip stock for nickel tube 6/10th instead of 4/10th. Change was made on July 6th. Ribbon for the iron <sup>ho-</sup>sockets, we have made no change, as I understood it was not necessary, they being plated 4/10th.

The other night [redacted] at the Laboratory you asked the weights of the different size motors being used by the Lansden Co., which I could not answer offhand.

- Motor #1026 - 60 volt - 40 amperes, 1000 revolutions, weighs 310 lbs.
- Motor #1022 - 60 volt, 60 amperes - 1100 revolutions, weighs 380 lbs.
- Motor #1027 - 85 volts, 60 amperes - 900 revolutions, weighs 660 lbs.

*Bachman*

Auth. Lansden.

IRA M. MILLER  
AKRON, OHIO

Private

Aug 9, 1911

H. F. Miller, Jr.

Orange N. J.

My Dear Sir:

Sorry I was not able to see you when at the Laboratory work was held Monday. Called at your Office but you had gone for the day. Apparently business has not been going over with the Lansden Co. and I was surprised to find there in the line of Liquidating. How does this happen and what was the real trouble with Lansden, Whittemore?

Do you know of any thing due for me to do there to shut up shop here also?

I would be glad to have a full itemized statement of my account with the Edison Storage Battery Co. which I withdrew since I began with Company

Yours truly  
I. M. Miller

TELEPHONE FORT HILL 3265.

SAMUEL WALLACE, JR., MANAGER.

# The Electric Wagon Company

Sole Agents for

## The Lansden Company, of Newark, N. J.

35 Federal Street, Boston  
Room 521

LANSDEN  
ELECTRIC  
WAGONS.

EDISON  
BATTERY  
EQUIPMENT.

Mr. Thomas A. Edison,  
West Orange, N. J.

Dear Sir:-

Mr. H. F. Miller, Treasurer of The Lansden Company, has stated to me in writing that you are the sole owner of the Company.

I have been seriously imposed upon by the management of The Lansden Company. I can get no satisfaction from anyone, and so feel that nothing is left but to state my case to you, although it is with reluctance that I trespass upon your time.

The facts are these:-

On March 15th, 1911, I entered into an arrangement with The Lansden Company to act as selling agent.

Notwithstanding the fact that "demonstrations" of commercial vehicles prove nothing and are a waste of time and money, Mr. Morgan insisted that two "demonstrators" be ordered and refused to make the arrangement otherwise. Accordingly two wagons were ordered - a 1 ton and a 2 ton.

Mr. Morgan stated that he had a 1 ton wagon on hand, "practically new" which he desired me to take. I agreed without seeing it - unfortunately. When it came I found that it must have been run many thousand miles. The tires were half worn out, the body old, rough and hastily painted over. It was neither "practically new" nor fit for a "demonstrator" even if one had been needed.

The statements as to the conditions of the wagon and the necessity for its being purchased constituted misrepresentation.

Mr. Morgan simply unloaded some dead stock at an exorbitant price.

In the meantime I had gone to considerable expense getting ready to push the sale of the Lansden product. I engaged a capable manager for the agency, hired an office and a man to operate the "demonstrator". Advertising in the papers was started, and a few trucks sold. In the first flush of enthusiasm I did not ship back Mr. Morgan's "gold brick" as I should have, but tried to make shift with it. I soon found that the wagon was doing more harm than good.

Soon rumors began to come along that The Lansden Company would get out new and better models. Realizing that it was useless to try and get business with models about to become obsolete, I cancelled the order for the 2-ton wagon, and put the 1-ton on storage.

On July 14th I made the request that the Lansden Company take this 1-ton wagon off my hands.

On July 21st I asked for a reply to this letter.

*Bookman - I want to do the agency thing by law best want to know what is investigation of this*

October 11, 1911

*Harry White E. that I am having his case investigated*

*March 1912*

## The Electric Wagon Company

Sole Agents for

**The Tansden Company, of Newark, N. J.**

35 Federal Street, Boston

Room 521

LANDSEN  
ELECTRIC  
WAGONS.

EDISON  
BATTERY  
EQUIPMENT.

#2.

On August 3rd I asked again.  
Soon after, Mr. Doty came here, listened to my statements and agreed to have in my hands by the following Monday a proposition to take back the wagon.

Nothing happened.

On Aug. 25th I wrote to inquire.

On Aug. 31st I wrote again.

On Sept. 7th Mr. Doty wrote "we are making an effort to dispose of it for your account, so far without success."

On Sept. 13th I wrote protesting against such evasion.

On Sept. 30th I wired "must have reply."

On Oct. 3rd Mr. Doty writes "suggest you sell the wagon at a price which will cover your investment in it." (Mr. Doty knows it cannot be done.)

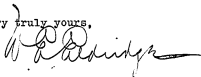
My Lansden experience has cost me about \$1300. spent for expenses plus \$1500. paid on account of the truck. Credit is due to me for commissions on sales to the Boston Rubber Shoe Co., The Lowell Electric Light Co., and the Mass. Homeopathic Hospital. No proper accounting has ever been rendered.

My means are limited and this is a serious matter with me.

I entered into the arrangement in good faith, and I have been abominably treated.

I have every confidence that you will promptly see to it that what is right shall be done.

Very truly yours,



*Auto*

VARIOUS TYPES FOR COMMERCIAL AND  
PASSENGER SERVICE THE EDISON  
STORAGE BATTERY EQUIPMENT.

## The Lansden Company

Address all mail P. O. Box 147.

~~Electric Wagnon~~

~~5408-56 Lockwood Avenue~~  
~~308-385 High Street~~  
Newark, N. J.

FACTORY TELEPHONE:  
840 BRANCH BROOK  
SALES OFFICE TELEPHONE:  
1945-1947 BRANCH BROOK

October 14, 1911.

Thomas A. Edison,

Orange, N.J.

Gentlemen;

We enclose you herewith invoice for cards  
ordered by Mr. Miller and Mr. Bachman, and delivered  
to them some time ago.

Yours very truly,

THE LANSDEN COMPANY

*G. H. Baldwin*

Auditor.

WAI/MAR.



COPY

October 20th 1911.

Mr. W. E. Eldridge,  
c/o Electric Wagen Co.,  
Federal Street,  
Boston, Mass.

Dear Sir:-

Replying to yours of the 11th inst.  
regarding the demonstrating wagen which you have on hand,  
Mr. Eisen directs me to write you that he is investigating  
the matter, and will write you shortly.

Yours very truly,

H. F. Miller

Secretary.

ELECTRIC TRUCKS  
GASOLINE TRUCKS  
DELIVERY WAGONS  
SEMI-TRAILERS

W. E. ELDRIDGE  
"COUPLE-GEAR" MOTOR TRUCKS  
178 DEVONSHIRE STREET  
BOSTON  
TELEPHONE FORT HILL 3368

1609  
20.10  
FRONT WHEEL DRIVE  
FRONT WHEEL STEER  
FOUR WHEEL DRIVE  
FOUR WHEEL STEER

October 24, 1911.

Mr. H. F. Miller, Secretary,  
Laboratory of Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

I have your favor of the 20th inst. and feel much relieved to hear that Mr. Edison is investigating the matter about which I have been writing.

I note that you ask what I consider a fair settlement of the matter. I think that I should be permitted to return the wagon, receiving back the \$1500. which I paid upon it. I think that I should also receive the amounts of commissions due for sales made of Lansden wagons.

Very truly yours,

*W. E. Eldridge*

WEM/CFB.

Oct. 26, 1911.

Mr. Edison:

As per your request to investigate the transactions Mr. Lansden had with the Electric Wagon Co., represented by Mr. Eldridge of Boston, beg to say that this wagon was sold to Mr. Eldridge with the understanding that it had been doing service, and for that reason offered them a special inducement on same.

I believe, however, that Mr. Eldridge was not used properly in the matter, in as much as he was told that the wagon had run but 500 miles and probably had gone 25000 miles. The chains, sprockets and tires were worn badly and the body was poorly constructed, but I have been informed that Mr. Eldridge had seen the machine he was buying and was apparently satisfied. This, however, is not reliable information.

Mr. Eldridge used this particular wagon to make a demonstration to the Lowell Electric Light Co., on the strength of which he made a sale; also a wagon practically in the same condition as the one Mr. Eldridge had bought. This is the wagon we had to take back and were allowed \$5.00 per day while being in use. We never had received payment on the machine, so this was the best arrangement I could make.

You will note from Mr. Eldridge's letter that he claims commission on this. I can only say that if Mr. Eldridge thought his deal an unfair proposition, why should he claim commission on a similar one which he personally made. I would, however, recommend that you give Mr. Eldridge a check for \$1500.00 and he return the machine to us and lose the \$720.00 which was due him for commission. Mr. Eldridge is a personal friend of John Lansden and I was told by Mr. Lansden personally on the first day of May that he would have Mr. Eldridge return this particular machine to us, and he would use him as soon as he could get started in business again. Later on Mr. Bee informed me of the same, saying that we could never hold our Boston Agents, as they were Lansden people and condemned the Edison proposition from the beginning.

Mr. Eldridge is in error when he says we have not made replies to his letters. The only ones we ignored were when he asked for commission on the Lowell Electric Light Co's wagon which we had to take back. I do not know whether this is the information you are looking for; other than this, I am unable to give you any, as these arrangements were made between Mr. Eldridge, Wallace and Morgan personally and there was no correspondence relating to same.

*Robert A. Macman*

C O P Y

October 28th 11.

W. R. Eldridge, Esq.,  
178 Devonshire Street,  
Boston, Mass.

Dear Sir:-

Replying to your letter of the 24th instant Mr. Edisen has informed the writer that if you will return the truck and give a full release of all claims he is willing that the Lansden Company should send you a check for Fifteen hundred (\$1500.00) Dollars, on receipt of wagon at Newark, and will cancel your agency contract.

Yours very truly,

H. P. MILLER

Secretary.

ELECTRIC TRUCKS  
GASOLINE TRUCKS  
DELIVERY WAGONS  
SEMI-TRAILERS

W. E. ELDRIDGE  
"COUPLE-GEAR" MOTOR TRUCKS  
178 DEVONSHIRE STREET  
BOSTON

TELEPHONE FORT HILL 3388

FRONT WHEEL DRIVE  
FRONT WHEEL STEER  
FOUR WHEEL DRIVE  
FOUR WHEEL STEER

October 30, 1911.

Mr. H. F. Miller,  
Laboratory of Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

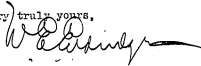
In replying to your letter of the 28th inst. I would say that I must decline to accept Mr. Edison's offer.

Fifteen hundred dollars is due me to refund the amount paid by me on account of the truck shipped to me.

There is also due to me, as per contract, commissions on the sale of Lansden trucks to the Boston Rubber Shoe Co., Massachusetts Homeopathic Hospital and the Lowell Electric Light Co. I shall be willing to return the truck, give a full release of all claims and cancel the agency contract upon receipt of the statement from Mr. Edison that what is due to me, as above, will be paid immediately upon receipt of the wagon. I cannot understand why he does not wish to have me paid the commissions which I have earned.

I enclose a clipping from Sunday's "New York Sun." I have the amount of capital referred to and you gentlemen over there know something about my qualifications. I would be glad to know what Mr. Edison's proposition is.

Very truly yours,



WEE/GFB.

[ATTACHMENT/ENCLOSURE]

and Electric  
wrought  
r. a. manufac-  
gas fixtures  
eleventh street  
as filed a peti-  
tion #81,214  
T. Judge Holt  
Gallok, vice-  
and Archibald  
solvers under  
receivers are  
business twenty  
of on receivers  
775 employees  
\$2,000 and the  
about \$50,000.  
are unsecured  
of finished  
in progress.  
shipment #122,  
which \$11,436  
to patents  
of stock  
valley.

Nearly 1,000,000 persons have visited  
the exhibit.

**BUSINESS OPPORTUNITIES.**

I HAVE AN ARTICLE, WITH WHICH A LIMITED NUMBER OF MIDDLE-AGED MEN WITH SOME BUSINESS EXPERIENCE AND A CAPITAL OF \$100 TO \$1,000 CAN START IN BUSINESS FOR THEMSELVES WITHOUT ENDANGERING THEIR CAPITAL. ADDRESS WITH QUALIFICATIONS TO  
THOMAS A. EDISON,  
EDISON LABORATORY,  
ORANGE, N. J.

CORPORATION manufacturer of a patented mechanical device for which there is a large market and no competition. Investor has not required a man with administrative ability and requires a man with administrative ability. See prospectus.  
Wm. A. STEVENSON, attorney, 215 St. Nicholas

Mr Edison

The old Lunsden Co through John Lunsden sold a truck to the Albert Dickinson Co of Minneapolis which started to go to pieces in six months (see their letter attached) Doty & Bachman agreed to rebuild it giving them a steel frame, new type countershafts etc free on the understanding that they would give us an order for three or four new trucks. The work cost \$1,003.<sup>00</sup> and they have <sup>now</sup> ordered one five ton truck @ \$530.<sup>00</sup> upon which the New Lunsden Co have allowed <sup>you</sup> a Commission of 10% or \$53.<sup>00</sup> leaving \$477.<sup>00</sup> due which is charged to you as per bill attached

H. T. M.

[ATTACHMENT/ENCLOSURE]

Questions are subject to change.

ALBERT DICKINSON, Pres.  
LARS SCHWENNINGER, Vice-Pres.  
WALTER SCHWENNINGER, Treas.  
CHAS. G. BOWLER, Secy.

MAIN OFFICES  
AND WAREHOUSES  
CHICAGO.

**ALBERT DICKINSON COMPANY**  
SEED MERCHANTS.

GRASS, CLOVER,  
& AGRICULTURAL SEEDS,  
BEANS, PEAS, POP-CORN, BIRD SEEDS, GRAIN BAGS,  
FLAX SEED AND POULTRY FEED.



Minneapolis, Minn. Oct. 3, 1911.



The Lansden Company,  
233 - High Street,  
Newark, N. J.

Dear Sirs:

Referring to your letter of the 21st, we have since had a call from Mr. H. L. Davisson of the Edison Storage Battery Co., and of course he says he is only able to give us the facts in the case from the battery side of the question, and suggests that we equip this machine with twelve more cells. We would like your opinion on this. In event of not equipping it with twelve more cells, would it be advisable to change the motor to operate under 60 cells? The batteries seem to be doing all right with the exception that we have had difficulty of seaming ground, which Mr. Davisson has agreed to replace with new style battery equipped with crating, which will eliminate this.

In regard to the third paragraph of our letter of September 16th, note you did not state what you would recommend in regard to a steel frame on this truck. The truck is not satisfactory at present. We cannot keep the alignment and adjustment of motor and driving parts in line so that the batteries



[ATTACHMENT/ENCLOSURE]

1914-1915

Quantities are subject to Market Changes.

ALBERT DICKINSON, Pres.  
CHAS. STEWART, Secy.  
WILLIAM S. BOWEN, Treas.  
WILLIAM S. BOWEN, Mgr.

**THE**  
**ALBERT DICKINSON COMPANY**

**SEE MERCHANTS.**

GRASS, CLOVER,  
& AGRICULTURAL SEEDS,  
BEANS, PEAS, POP-CORN, BIRD SEEDS, GRAIN BAGS,  
FLAX SEED AND POULTRY FEED.

MAIN OFFICES  
AND WAREHOUSES  
CHICAGO.

MINNEAPOLIS, MINN.



The Lansden Co. - 2.

and motor can give us the efficient service they are capable of. Further, having taken up the matter of wheeled base, in less than six months have started to have tire trouble. This could have been eliminated had we used 32 x 4 or 5" base on the wheel instead of the 3 1/2". The tire people recommend for a 3-ton truck a 36 x 4" wheel. Under the conditions of operation here, over about a half a mile of good country road, the balance on pavement, the larger wheel would have been more satisfactory.

In view of the fact that this truck is practically breaking down under six months service, would like to have your suggestion as to whether or not it had better be sent back to the factory to be rebuilt, and if so, what kind of a proposition you will make us to do so. We still have faith in the electric truck, but fear that this made was not built sufficiently heavy nor strong enough to do the work claimed for it. We wish if you have a representative in this section, that you would send him here to look over the situation and have him decide whether or not it is a fair sample of your workmanship; whether you would care to have this truck pointed out to in

[ATTACHMENT/ENCLOSURE]

Quantities are subject to change.

ALBERT DICKINSON, OWNER,  
EMERSON BUILDING, 100 N. WABASH ST.,  
CHICAGO, ILL.

MAIN OFFICES  
AND WAREHOUSES  
CHICAGO.



The Lansden Co. - 3.

this section as being a sample of what to expect from all Lansden trucks. We believe we have given it a thorough trial and used every effort to make it a success, and believe yet, that if the frame were strengthened and the braces for the motor and sprocket strengthened, so that the alignment and adjustment would be proper, the width of the wheels increased in front and in back, that the truck would give satisfactory service.

Awaiting your further reply,

Yours truly,

THE ALBERT DICKINSON CO.  
*[Signature]*

44-WCA

[ATTACHMENT/ENCLOSURE]

Quotations are subject to market changes.

ALBERT DICKINSON, President  
CHAS. G. WOODRUFF, Vice President  
WILLIAM H. WOODRUFF, Treasurer  
WILLIAM H. WOODRUFF, Secretary

**THE ALBERT DICKINSON COMPANY**

**SEE MERCHANTS.**

CHAS. G. WOODRUFF,  
AGRICULTURAL SEEDS,  
BEANS, PEAS, POP-CORN, BIRD SEEDS, GRAIN BAGS,  
FLAX SEED AND POULTRY FEED.

MAIN OFFICES  
AND WAREHOUSES  
CHICAGO.

MINNEAPOLIS WAREHOUSE

Minneapolis, Minn.

Oct. 6, 1911



The Lansden Co.,

Box 147, Newark, N.J.

Dear Sirs:

Referring to your letter of Oct. 2nd. Ours of Oct. 3rd had already gone forward. Do not know what arrangements you have made with Mr. Lock, but the truck is in operation at the Minneapolis office and trust that if further arrangement has been made with the Chicago office you will advise us direct what it has been.

We hardly believe that in view of the condition of this truck that it would be advisable or profitable to repair it, unless it were thoroughly repaired. Have had the matter up with makers of truck bodies here in Minneapolis and they advise that the job should be thoroughly done from the bottom up so that the upper alignment of all parts could be maintained and maximum efficiency of batteries obtained.

Also would be pleased to hear from you in regard to the matter of wheels and driving tires which we mentioned in our letter of the 3rd, which we believe covers the subject.

Yours truly,

THE ALBERT DICKINSON COMPANY

WCA-41

[ATTACHMENT/ENCLOSURE]

243

Oct. 9, 1911.

The Albert Dickinson Co.,  
Minneapolis, Minn.

Gentlemen:

Your letters of October 3rd and October 6th duly received and noted. We have carefully considered all the circumstances connected with this truck, and have decided that it will be to your advantage as well as to ours to return the truck here and allow us to reconstruct it by putting in heavier frame. We are in a position to do this promptly and will make no charge for the work, provided you will agree to pay the shipping charges in both directions. When it is returned to you it will be practically a new wagon including new wheels and tires. We trust you will decide to let us do the work. If so, you may ship the wagon by freight without further notice. In the meantime we will hold up shipment of the truss rods which we had arranged with Mr. Look to furnish.

Yours very truly,

THE LANSDEN COMPANY

Sales Department.

AJD/SS

ELECTRIC TRUCKS  
GASOLINE TRUCKS  
DELIVERY WAGONS  
SEMI-TRAILERS

W. E. ELDRIDGE  
"COUPLE-GEAR" MOTOR TRUCKS  
178 DEVONSHIRE STREET  
BOSTON  
TELEPHONE FORT HILL 3368

FRONT WHEEL DRIVE  
FRONT WHEEL STEER  
FOUR WHEEL DRIVE  
FOUR WHEEL STEER

November 10, 1911.

Mr. H. P. Miller,  
Laboratory of Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Please favor me with a reply to my letter of October 30th.  
This concerns a matter which I think you will agree with me should be  
promptly cleaned up.

Very truly yours,

*W. E. Eldridge*

*Say*  
If you will submit a proposition which taking  
in consideration all the circumstances, I will  
take the matter better up —

WEE/CFB.

*Mr. Edison  
I did not reply to his letter  
as per your instructions  
H. Zille*

ELECTRIC TRUCKS  
CAROLINE TRUCKS  
DELIVERY WAGONS  
SEMI-TRAILERS

W. E. ELDRIDGE  
"COUPLE-GEAR" MOTOR TRUCKS  
178 DEVONSHIRE STREET  
BOSTON  
TELEPHONE FORT HILL 3288

FRONT WHEEL DRIVE  
FRONT WHEEL STEER  
FOUR WHEEL DRIVE  
FOUR WHEEL STEER

November 22, 1911.

Mr. H. F. Miller, Secretary,  
Laboratory of Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

I have received no reply to my letters of Oct. 30 and Nov. 10.  
I do not know how to take your attitude.  
I have waited patiently since early last summer for a settle-  
ment.

Everyone assured me that when Mr. Edison returned from Europe  
I could get fair treatment.

Your policy of evasion is still working.

I cannot believe that the matter has been placed before Mr.  
Edison personally in the proper light.

I am not yet willing to believe that Mr. Edison desires to  
evade payment of a just claim. Therefore I now make one more appeal to  
him for a square deal.

If I am again ignored, what is left to me but to bring action?

Truly yours,



*Auto LANSDEN*

C O P Y.

JAMES A. HEARN & SON

New York November 22, 1911

The Lansden Company,  
233 High Street,  
Newark, N. J.

Attention: Mr. A. J. Doty.

*file Lansden*

Gentlemen:-

Replying to your letter of November 21st, just received, would say that the matters referred to in yesterday's conversation with Mr. Edison seem to constitute an offer to make some restitution for the enormous damages this firm sustained during the past year's operation of the fifteen (15) high priced but absolutely inefficient chassis your Company sold us in 1910. The offer did not impress the writer as very liberal (and you must admit that it has been very tardily made), nevertheless, as some evidence of a desire to make amends it seemed desirable to meet it half way.

The sum that James A. Hearn & Son lost directly and indirectly by the transaction is so far beyond the cost of the adjustments you proposed to make as to be beyond the possibility of comparison.

As the conversation seemed important full notes of it were made by the writer immediately on reaching the station and his memory of it is very distinct. Your letter sets out a part of the conversation correctly but omits some items and includes one that was never mentioned and could not be considered for a moment, viz.,

Charging "other material and labor at cost plus 15%."

The agreements made were as follows:-

1.- The Lansden Company was to rewire the chassis and rewire motor and make any other adjustments to truck 151 necessary to make it as efficient as the other three ton truck without charge. While this was being done the Company was to loan to us one or two wagons for use in its place.

2.- The Lansden Company will rebuild chasses on the fifteen (15) wagons (the ones rebuilt in 1910) using chrome nickled pressed steel frames, present springs, axles and other material unless otherwise ordered, and will rewire the chasses (and the motors if necessary) on these vehicles without any charge whatever except \$24. each, the net cost of the pressed steel frames. While this work was going on on these wagons the Lansden Company was to loan us one, two or three wagons according to the number that they were working on.

15 cars

The Lansden Company -2-

The only item of expense to be borne by James A. Hearn & Son was the \$24. each net cost of the pressed steel frames.

It has not been forgotten that the difficulties and hardships of last winter were reported almost daily both to the Lansden Company and to the Edison Battery Company without receiving the slightest substantial assistance, and it is a record which the writer, out of consideration for those present, did not care to emphasize.

It is repeated that this offer constitutes the minimum, not the maximum that could be offered by the Lansden Company if it is to retain its self-respect.

Yours very truly,

(signed) H. Prescott Beach

for

James A. Hearn & Son.



# DAY LETTER

## THE WESTERN UNION TELEGRAPH COMPANY

25,000 OFFICES IN AMERICA. CABLE SERVICE TO ALL THE WORLD

This Company TRANSMITS and DELIVERS messages only on conditions limiting its liability, which have been accepted in by the sender of the following Day Letter. Every one who receives a message here to the sender makes for acceptance, and the sender will not hold liable for errors or delays in transmission, or effect, unless otherwise stated hereon. This company has been selected by the undersigned for any time when the date is not precluded in writing within six days after the message is received or transmitted. This is an UNREGISTERED DAY LETTER, and is delivered by request of the sender, under the name marked above.

THEO. N. VAIL, PRESIDENT

AGLAUDERE BROOKS, GENERAL MANAGER  
DEC 1 1911

RECEIVED AT

20 MB 37 Blue  
Br Boston Mass 20  
2d Edison Secretary  
Can get no satisfaction about  
claim from General Company a  
your Secretary Will you personally  
call for and read correspondence  
my past letters entirely ignored  
Don't want to spend time  
or money coming over to  
see you  
Edridge

DEC 1 - 1911

*Auto*

## The Lansden Company

VARIOUS TYPES FOR COMMERCIAL AND  
PASSENGER SERVICE. THE EDISON  
STORAGE BATTERY EQUIPMENT.

**Electric Wagons**

~~133-936 High Street~~  
Newark, N. J.

FACTORY TELEPHONE: 342 BRANCH BROOK  
SALES OFFICE TELEPHONE: 1765-1767 BRANCH 2200K

December 26, 1911.

Mr. H. F. Miller,  
o/o Edison Laboratory,  
Orange, N. J.

Dear Sir:

Kindly return to us all the correspondence  
which we sent to you with the Electric Wagon Co.,  
Boston, Mass., and W. E. Elbridge, Boston, Mass.

If you have any other correspondence  
in your possession belonging to the Lansden Company,  
we would appreciate your returning same.

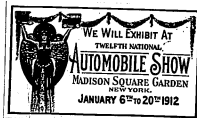
Yours very truly,

THE LANSDEN COMPANY



General Manager.

SS/WLC



Auto - Lawson

*file*  
Dec. 27th, 1911.

Mr. Edison:-

Supplementary to the list sent you 12/11/11, beg  
to hand you herewith a list of additional work done and in  
progress for the Lawson Co.

| Our S.O.    | Their Reg. | 13780-97 -                           | for 36 Safety Switches |
|-------------|------------|--------------------------------------|------------------------|
| " " 2737-54 | " " 13851- | " four 3-ton upper steering          | head brackets          |
| " " 2766-   | " " 13852  | " 4 Caps on steering head brackets   | "                      |
| " " 2767-   | " " 13899  | " 4 3-ton lower " "                  | "                      |
| " " 2780    | " " 13947  | " 4 " Long countershafts             | "                      |
| " " 2781    | " " 13951  | " 4 " Short                          | "                      |
| " " 2782    | " " 13973  | " 6 of each 5 ton long and short     | countershafts          |
| " " 2786    | " " 13990  | " 5 " " 3 ton left brake rod         | brackets and caps      |
| " " 2790    | " " 13992  | " 5 of each 3 ton right rod          | bracket and caps       |
| " " 2792    | " " 13991  | " 18 5-ton counter housing caps      | "                      |
| " " 2794    | " " 13994  | " 18 " " housings                    | "                      |
| " " 2793    | " " 13993  | " 4 5-ton Brake Drums                | "                      |
| " " 2804    | " " 14230  | " 4 2-ton " "                        | "                      |
| " " 2805    | " " 14231  | " 4 5-ton Brake Lever Brackets       | "                      |
| " " 2806    | " " 14232  | " 4 5-ton " " Yokes                  | "                      |
| " " 2807    | " " 14233  | " 8 3-ton " Shoes                    | "                      |
| " " 2808    | " " 14234  | " 8 3-ton " " Brackets               | "                      |
| " " 2809    | " " 14235  | " 4 3-ton Rear Spring Blocks         | "                      |
| " " 2810    | " " 14236  | " 8 2-ton Brake shoe brackets        | "                      |
| " " 2811    | " " 14237  | " 8 2-ton Brake shoes                | "                      |
| " " 2812    | " " 14238  | " 4 2-ton Rear Spring Blocks         | "                      |
| " " 2813    | " " 14239  | " 10 5-ton Motor suspension brackets | "                      |
| " " 2814    | " " 14240  | " 10 5-ton Caps for " "              | "                      |
| " " 2815    | " " 14241  | " 8 3-ton " " " "                    | "                      |
| " " 2816    | " " 14242  | " 8 3-ton Motor " "                  | "                      |

Nicolai.

Copies to Messrs. Bachman and Miller.

*Accts*

Address all mail P. O. Box 147.

# The Lansden Company

## Electric Wagons

VARIOUS TYPES FOR COMMERCIAL AND  
PASSENGER SERVICE. THE EDISON  
STORAGE BATTERY EQUIPMENT.

~~54 & 56 Lackawanna Avenue~~  
~~230 230 11th Street~~  
Newark, N. J.

FACTORY TELEPHONE: 840 BRANCH BROOK  
SALES OFFICE TELEPHONE: 1966-1967 BRANCH BROOK

December 29, 1911.

Mr. H. F. Miller,  
c/o Edison Laboratory,  
Orange, New Jersey.

Dear Sir:

In compliance with your request over the  
telephone, we are sending you The Lansden Company's  
scrap-book, with clippings to June 1910.

Yours very truly,

THE LANSDEN COMPANY

*A. J. Doty*  
Sales Department.

SS/AJD



Mr Edison

Regarding Eldridge letter  
Morgan did sell him a second hand  
wagon in consideration of getting  
an exclusive agency for Boston  
all of Massachusetts east of Worcester  
County & the State of Rhode Island,  
and he agreed to take it as you will  
see from his letter attached. We  
also offered to give him a new body  
and tires.

He sent us \$150.00 on account.

The wagon was billed to him at \$247.50  
and we have applied all Commission  
due him against the balance due us.  
His Commissions on sales are \$420.00

I understand he is friendly to London  
Mr Doty never made a proposition to  
take back the wagon as he states  
H. S. M.

Harry & Bachman

~~of Edison~~

Say to Edison that Mr E  
says if he will return  
the truck & close  
the transaction that  
he is willing to order  
Co should send him  
check for \$1500 or  
Receipt of Edison at Newark.

~~See~~ See you get a release in  
full & no further claims -  
Edison

*Auto Lander*

VARIOUS TYPES FOR COMMERCIAL AND PASSENGER SERVICE. THE EDISON STORAGE BATTERY EQUIPMENT

THE LANSDEN CO.  
NEWARK, N. J.

## Electric Wagons

1834 WALNUT AVENUE  
CLEVELAND, OHIO

S. R. BAILEY & CO.  
AMESBURY, MASS.

IRA M. MILLER

Part 2

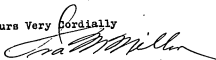
TELEPHONE NORTH 300

Call it the Edison and then centralize in and around this building Electrical Manufacturing concerns and thus not necessarily create an expensive interior to the building.

We can get the Halle & Higbee cars to join us and we should find plenty of others in due time by including pleasure Electric for day storing and charging while business wagons are out on duty.

At your earliest convenience we would be glad to hear from you on this subject and oblige.

Yours Very Cordially



P.S. If this is successful in Cleveland we could repeat it in other towns.

D  
1911 TAE, Inc.  
-Financial

Mr Edison

The attached list of a/c's  
should be written off to Loss ac  
Will you please OK.

H. J. Miller

Explains A to me

E



Charge Profit and Loss

and  
Credit the following - viz

|                                     |              |        |
|-------------------------------------|--------------|--------|
| Silver Lake Insurance               | \$ 480.50    | ✓      |
| Florida Liability Expense           | 7472.53      | ✓      |
| Insurance (L)                       | 10943.2      | ✓ Laby |
| Gift of                             | 20,092.00    | ✓      |
| New York Taxes, Interest, Insurance | 1875.00      | ✓      |
| Life Insurance                      | 777.50       | ✓      |
| Silver Lake Taxes                   | 1638.40      | ✓      |
| Menlo Park Insurance Taxes Etc      | 92.30        | ✓      |
| Burlington Township Taxes           | 27.93        | ✓      |
| Taxes                               | 1135.05      | ✓ Laby |
| Milan Ohio, Taxes                   | 25.87        | ✓      |
| Legal Expense                       | 583.10       | ✓      |
| Total                               | \$ 35,294.50 | ✓      |

Individuals and Companies

|                     |             |   |
|---------------------|-------------|---|
| Thomas a. Edison Jr | 4492.75     | ✓ |
| Wm L. Edison        | 3561.08     | ✓ |
| J. M. Lansden Jr    | 3250.9      | ✓ |
| Total               | \$ 8,378.92 |   |



Collection

361.581

280.19

330.100

341.153

6712.53

140.20

485.273

320.414

717.214

1510.51

868.61

103.09

8788.74

50.16

883.619

8.968.15

8.978.20

182.96

9.161.41

The Casden Co.

| 1911  | Total Shipments | Orders Invoiced | Total orders Invoiced | Invoices  |           |
|-------|-----------------|-----------------|-----------------------|-----------|-----------|
| March |                 |                 |                       |           |           |
| 1     | 93.55           | 93.55           | -                     | -         | 190.83    |
| 2     | "               | "               | -                     | -         | 2451.57   |
| 3     | 24.60           | 118.45          | -                     | -         | 821.08    |
| 4     | 5671.16         | 5789.61         | -                     | -         | 3566.15   |
| 5     | "               | "               | -                     | -         | 1185.25   |
| 6     | "               | "               | -                     | -         | 4647.75   |
| 7     | "               | "               | -                     | -         | 126.17    |
| 8     | 2569.97         | 8358.58         | 17264.50              | 17264.50  | 4773.27   |
| 9     | 2544.40         | 10953.48        | "                     | "         | 1668.69   |
| 10    | "               | "               | "                     | "         | 4942.01   |
| 11    | 12.75           | 10966.23        | "                     | "         | 967.88    |
| 12    | 105.01          | 11,071.24       | "                     | "         | 2034.15   |
| 13    | "               | "               | 13,728.00             | 30,992.50 | 843.78    |
| 14    | 78.60           | 11,149.84       | 2900.00               | 34,892.50 | 5827.85   |
| 15    | "               | "               | 2,950.00              | 37,842.50 | 5883.97   |
| 16    | "               | "               | "                     | "         | 77.05     |
| 17    | "               | "               | "                     | "         | 9791.58   |
| 18    | 155.86          | 11305.70        | "                     | "         | 546.26    |
| 19    | "               | "               | "                     | "         | 10,321.24 |
| 20    | "               | "               | "                     | "         | 50.85     |
| 21    | 160.61          | 11,466.31       | "                     | "         | 10,376.09 |
| 22    | 520.63          | 11,946.94       | "                     | "         | 873.05    |
| 23    | 5442.19         | 17,429.13       | "                     | "         | 11,208.77 |
| 24    | 4520            | 17,484.42       | "                     | "         | 4662.1    |
| 25    | 6.88            | 17,491.31       | 5515.50               | 43358.00  | 11,711.88 |
| 26    | "               | "               | "                     | "         | 101.46    |
| 27    | "               | "               | "                     | "         | 11,917.24 |
| 28    | "               | "               | "                     | "         | 190.35    |
| 29    | 3083.72         | 20,575.03       | 4625.00               | 47,983.00 | 14687.64  |
| 30    | "               | "               | 10162.00              | 58145.00  | 202.55    |
| 31    | "               | "               | "                     | "         | 12410.13  |

6209.91  
1106.77  
6,542.77  
5135.91  
11,678.02  
6270.15  
17948.17  
1241.74  
18,189.91  
3028.92  
21218.84  
5003.25  
26224.09  
990.00  
34,172.09  
34,241.39  
501.00  
34,742.39  
14815  
34,890.62  
6282  
34,953.44

# The Lonsden Co

| 1911  | Shipments | Total Shipments | Orders  | Total Orders | Bills    |
|-------|-----------|-----------------|---------|--------------|----------|
| April |           |                 |         |              |          |
| 1     | 122.22    | 122.22          | -       | -            | 2591.68  |
| 2     | 244.06    | 366.28          | -       | -            | 1555.43  |
| 3     | -         | -               | -       | -            | 4126.81  |
| 4     | 5645.50   | 6011.78         | -       | -            | 2482.81  |
| 5     | 34.20     | 6045.98         | -       | -            | 5607.62  |
| 6     | "         | "               | -       | -            | 2113.41  |
| 7     | 4120.00   | 10165.98        | -       | -            | 8721.03  |
| 8     | .60       | 10166.58        | -       | -            | 842.44   |
| 9     | "         | "               | -       | -            | 9563.47  |
| 10    | 4846      | 10215.04        | -       | -            | 4158.77  |
| 11    | "         | "               | -       | -            | 9979.32  |
| 12    | 6589.50   | 16804.54        | -       | -            | 835.45   |
| 13    | "         | "               | -       | -            | 10814.77 |
| 14    | 3575.22   | 17162.06        | -       | -            | 237.27   |
| 15    | "         | "               | -       | -            | 11052.11 |
| 16    | "         | "               | -       | -            | 405.43   |
| 17    | "         | "               | -       | -            | 11458.07 |
| 18    | "         | "               | -       | -            | 7057.55  |
| 19    | "         | "               | -       | -            | 12508.62 |
| 20    | "         | "               | -       | -            | 12120.96 |
| 21    | 295633    | 1745739         | -       | -            | 12629.58 |
| 22    | 374216    | 2139955         | -       | -            | 4378.80  |
| 23    | "         | "               | -       | -            | 17065.43 |
| 24    | "         | "               | -       | -            | 4126.81  |
| 25    | 3050.00   | 24449.55        | -       | -            | 17647.88 |
| 26    | 4865.00   | 29314.55        | 5997.50 | 5797.50      | 16025.67 |
| 27    | "         | "               | "       | "            | 3061.69  |
| 28    | "         | "               | "       | "            | 21330.36 |
| 29    | 1051334   | 3982789         | -       | -            | 7257.73  |
| 30    | -         | -               | -       | -            | 2189.17  |

Collectors

5831.62

~~6975.87~~

6977.46

80.47

6982.39

1075.84

5062.84

~~188.23~~

825.21

415477

1240.698

224.53

12721.51

3327.90

1605941

77820

1682751

# The Lansden Co

1911  
May

Shipments  
Total  
Shipments  
orders  
Total  
orders

Bills

|    | Shipments                   | Total Shipments       | orders   | Total orders |
|----|-----------------------------|-----------------------|----------|--------------|
| 1  | #661866<br><del>40000</del> | 1000027               | none     | none         |
| 2  | 28910<br>69375              | 10329.37              | "        | "            |
| 3  | 418<br>69785                | 10371.19              | "        | "            |
| 4  | 650<br>6986.11              | 10377.69              | "        | "            |
| 5  | "                           | "                     | 1775.00  | 1775.00      |
| 6  | 2650.00<br>7135.00          | 13027.69              | "        | "            |
| 7  | "                           | "                     | 3920.00  | 5695.00      |
| 8  | "                           | "                     | "        | "            |
| 9  | 402000<br>12654.05          | 17047.69              | "        | "            |
| 10 | "                           | "                     | "        | "            |
| 11 | "                           | "                     | "        | "            |
| 12 | "                           | "                     | "        | "            |
| 13 | "                           | 20766.95              | "        | "            |
| 14 | "                           | "                     | "        | "            |
| 15 | 371926<br>17315.34          | "                     | "        | "            |
| 16 | 3150.00<br>21525.34         | 23916.95              | 8325.00  | 14020.00     |
| 17 | "                           | "                     | 2800.00  | 16820.00     |
| 18 | "                           | "                     | "        | "            |
| 19 | 3300.00                     | 27216.95              | "        | "            |
| 20 | "                           | "                     | "        | "            |
| 21 | "                           | "                     | "        | "            |
| 22 | 4227.50<br>25054.80         | 21444.45              | "        | "            |
| 23 | "                           | "                     | "        | "            |
| 24 | "                           | "                     | "        | "            |
| 25 | "                           | "                     | "        | "            |
| 26 | 2738.00                     | (Revised)<br>30790.84 | 10688.00 | 27508.00     |
| 27 | 4770.00                     | 35560.84              | "        | "            |
| 28 | "                           | "                     | "        | "            |
| 29 | 2650.00                     | 38210.84              | "        | "            |
| 30 | "                           | "                     | "        | "            |
| 31 | "                           | "                     | 2725.00  | 30233.00     |

981.59  
6474.84  
21120.33  
49963  
292636  
1129.65  
4066.61  
270.00  
1236.53  
2157.15  
6152.62  
312.75  
6866.03  
6474.8  
7453.91  
1537.91  
8991.82  
X



collections

16953.10  
2712.45  
18565.55  
460.22  
20,225.77  
20787.85  
2724.

# The Standard Co

| 1911<br>June | Shipments | Total<br>Shipments | Orders  | Total<br>Orders |
|--------------|-----------|--------------------|---------|-----------------|
| 1            | none      | none               | none    | none            |
| 2            | 2000.00   | 2000.00            | "       | "               |
| 3            | 2659.00   | 4659.00            | 3150.00 | 3150.00         |
| 4            | -         | -                  | -       | -               |
| 5            | 3388.9    | 4988.9             | "       | "               |
| 6            | "         | "                  | "       | "               |
| 7            | 6571.00   | 11559.89           | "       | "               |
| 8            | 425.00    | 11984.89           | "       | "               |
| 9            | "         | "                  | "       | "               |
| 10           | 3426.96   | 15411.85           | "       | "               |
| 11           | -         | -                  | -       | -               |
| 12           | "         | "                  | "       | "               |
| 13           | "         | "                  | "       | "               |
| 14           | "         | "                  | "       | "               |
| 15           | "         | "                  | "       | "               |
| 16           | 2542.11   | 17953.96           | "       | "               |
| 17           | 2800.00   | 20753.96           | "       | "               |
| 18           | -         | -                  | -       | -               |
| 19           | -         | -                  | 2677.50 | 5827.50         |
| 20           | "         | "                  | "       | "               |
| 21           | "         | "                  | "       | "               |
| 22           | 8604.26   | 29358.22           | "       | "               |
| 23           | "         | "                  | 5992.50 | 11820.00        |
| 24           | "         | "                  | "       | "               |
| 25           | "         | "                  | 3200.00 | 15020.00        |
| 26           | "         | "                  | "       | "               |
| 27           | 8864.00   | 38222.22           | "       | "               |
| 28           | "         | "                  | "       | "               |
| 29           | 520.11    | 38742.33           | "       | "               |
| 30           | 232.50    | 38974.83           | "       | "               |

# The Lander Co

1911

July

shipments

total  
shipments

orders

total  
orders

|    | shipments | total<br>shipments | orders   | total<br>orders |
|----|-----------|--------------------|----------|-----------------|
| 1  | 330.00    | 330.00             | 2.       | 2.              |
| 2  | —         | —                  | —        | —               |
| 3  | —         | —                  | —        | —               |
| 4  | —         | —                  | —        | —               |
| 5  | 10,063.   | 13,363.00          | —        | —               |
| 6  | 2850.     | 16,213.00          | —        | —               |
| 7  | "         | "                  | 2650.00  | 2650.00         |
| 8  | "         | "                  | 29000.00 | 21,650.00       |
| 9  | —         | —                  | —        | —               |
| 10 | "         | "                  | "        | "               |
| 11 | "         | "                  | "        | "               |
| 12 | "         | "                  | "        | "               |
| 13 | "         | "                  | 2900.00  | 34,550.00       |
| 14 | "         | "                  | "        | "               |
| 15 | "         | "                  | "        | "               |
| 16 | —         | —                  | —        | —               |
| 17 | "         | "                  | 1,500.00 | 36,050.00       |
| 18 | "         | "                  | "        | "               |
| 19 | 2738.00   | 19,951.00          | "        | "               |
| 20 | 9308.00   | 28,259.00          | "        | "               |
| 21 | 31534     | 2857434            | "        | "               |
| 22 | "         | "                  | "        | "               |
| 23 | —         | —                  | —        | —               |
| 24 | "         | "                  | "        | "               |
| 25 | "         | "                  | "        | "               |
| 26 | "         | "                  | "        | "               |
| 27 | 2650.00   | 31224.34           | "        | "               |
| 28 | "         | "                  | "        | "               |
| 29 | "         | "                  | "        | "               |
| 30 | "         | "                  | "        | "               |
| 31 | "         | "                  | "        | "               |

# The Lansden Co

| 1911<br>and | shipments | total<br>shipments | orders  | total<br>orders |
|-------------|-----------|--------------------|---------|-----------------|
| 1           | —         | —                  | —       | —               |
| 2           | "         | "                  | "       | "               |
| 3           | 111.60    | 111.60             | 85.10   | 85.10           |
| 4           |           |                    |         |                 |
| 5           |           |                    |         |                 |
| 6           |           |                    |         |                 |
| 7           |           |                    |         |                 |
| 8           |           |                    |         |                 |
| 9           |           |                    |         |                 |
| 10          |           |                    |         |                 |
| 11          |           |                    |         |                 |
| 12          |           |                    |         |                 |
| 13          |           |                    |         |                 |
| 14          |           |                    |         |                 |
| 15          |           |                    |         |                 |
| 16          |           |                    |         |                 |
| 17          |           |                    |         |                 |
| 18          |           |                    |         |                 |
| 19          |           | 17300.10           | —       | 8117.67         |
| 20          | —         | —                  | —       | —               |
| 21          | —         | —                  | 2073.00 | 10190.67        |
| 22          | 192.71    | 17493.81           | 41.85   | 10232.52        |
| 23          | 297.4     | 17523.55           | 355.20  | 10587.72        |
| 24          | 2728.52   | 20252.07           | 22.01   | 10609.75        |
| 25          | "         | "                  | "       | "               |
| 26          | 2400.00   | 22652.07           | 22.00   | 10631.83        |
| 27          | —         | —                  | —       | —               |
| 28          | 3200.00   | 25852.07           | 10.00   | 10641.83        |
| 29          |           |                    |         |                 |
| 30          | 7.75      | 26124.81           | 5.00    | 10752.33        |
| 31          | 6492.7    | 26774.05           | 52.00   | 10804.33        |

17300.10  
 2073.00  
 41.85  
 355.20  
 22.01  
 22.00  
 10.00  
 5.00  
 52.00

# The Lunsden Co

| 1911 |    | Shipments | Total Shipments | Orders  | Total orders |
|------|----|-----------|-----------------|---------|--------------|
| Sept | 1  | -         | -               | 70.95   | 70.95        |
|      | 2  | -         | -               | 890     | 79.88        |
|      | 3  | -         | -               | -       | -            |
|      | 4  | -         | -               | -       | -            |
|      | 5  | 396.14    | 396.14          | 52.15   | 132.03       |
|      | 6  | -         | -               | 1300    | 145.00       |
|      | 7  | 2595.00   | 3291.14         | 89.40   | 234.48       |
|      | 8  | 472.22    | 3763.36         | 350.00  | 584.43       |
|      | 9  | -         | "               | 1350    | 597.93       |
|      | 10 | "         | "               | 1100    | 608.95       |
|      | 11 | 898.28    | 4661.64         | 7500    | 683.95       |
|      | 12 | -         | -               | -       | -            |
|      | 13 | 10060     | 4762.24         | 3000    | 713.90       |
|      | 14 | -         | -               | 4800    | 761.95       |
|      | 15 | -         | -               | 215     | 764.05       |
|      | 16 | -         | -               | 576     | 769.81       |
|      | 17 | -         | -               | -       | -            |
|      | 18 | 2909.25   | 7671.49         | 2475    | 794.56       |
|      | 19 | -         | -               | 3640    | 830.96       |
|      | 20 | 2658.92   | 7192.41         | -       | -            |
|      | 21 | -         | -               | 425     | 835.21       |
|      | 22 | 277.21    | 7469.62         | 1300    | 848.21       |
|      | 23 | 31.76     | 7501.38         | 7500    | 923.21       |
|      | 24 | -         | -               | 400     | 927.21       |
|      | 25 | -         | -               | -       | -            |
|      | 26 | -         | -               | -       | -            |
|      | 27 | 232.26    | 7733.64         | 3500    | 962.21       |
|      | 28 | -         | -               | 3350.25 | 4312.56      |
|      | 29 | 33.20     | 7766.84         | 1900    | 4331.56      |
|      | 30 | -         | -               | -       | -            |

# The Lanaden Co

Shipments

Total Shipments

Orders

Total Orders

1911

| Oct | Shipments | Total Shipments | Orders   | Total Orders |
|-----|-----------|-----------------|----------|--------------|
| 1   | -         | -               | 79 88    | -            |
| 2   | -         | -               | 73 80    | 153 68       |
| 3   | -         | -               | 2000     | 173 68       |
| 4   | 107 58    | 107 58          | 4500     | 218 68       |
| 5   | -         | -               | 9500     | 313 68       |
| 6   | 63 08     | 170 66          | 19 51    | 333 19       |
| 7   | -         | -               | -        | -            |
| 8   | -         | -               | 4210 00  | 4543 19      |
| 9   | -         | -               | 300      | 4546 19      |
| 10  | 95 00     | 265 66          | 1688     | 4583 07      |
| 11  | 70 94     | 336 60          | -        | -            |
| 12  | -         | -               | 4500     | 4608 07      |
| 13  | -         | -               | -        | -            |
| 14  | -         | -               | -        | -            |
| 15  | -         | -               | -        | -            |
| 16  | 3600 00   | 3936 60         | 3600 00  | 8208 07      |
| 17  | 250 00    | 3986 60         | 3800     | 8246 07      |
| 18  | 222 00    | 4208 60         | 2050     | 8246 67      |
| 19  | -         | -               | 385      | 8300 42      |
| 20  | 240 50    | 4458 50         | 150 00   | 8450 42      |
| 21  | 39 50     | 4498 08         | 4200     | 8492 42      |
| 22  | -         | -               | -        | -            |
| 23  | 147 00    | 4645 08         | 211 71   | 8704 13      |
| 24  | 400 00    | 5045 08         | 8000     | 8792 38      |
| 25  | -         | -               | 11500 00 | 25350 38     |
| 26  | 248 21    | 5293 21         | 1981     | 25370 19     |
| 27  | -         | -               | 9555     | 25465 74     |
| 28  | -         | 5275 18         | 2868     | 25494 42     |
| 29  | -         | -               | -        | -            |
| 30  | -         | -               | -        | -            |
| 31  | -         | -               | -        | -            |

**Edison General File Series**  
**1911. Battery, Storage - Edison Storage Battery Company (E-11-15)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery. Included are estimated advertising budgets and printed advertising proofs, several of which contain corrections or other remarks written by Edison in the form of marginalia. Among the correspondents are the advertising firm of Calkins & Holden and longtime Edison associate T. Commerford Martin, who was collecting figures about the Edison Storage Battery Co. on behalf of the U.S. Census office. One letter by Henry Lanahan and Clarence Churchill, written on behalf of the company, concerns urban agencies involved in the sale of "pleasure electrics" and their attitude toward the Edison battery. Also included are two expense statements pertaining to the assembly of battery cells and a letter from investor James Gaunt.

Approximately 30 percent of the documents have been selected. The documents not selected include invoices, purchase orders, and additional advertising proofs, along with a draft booklet entitled "The Margin of Certainty." Also not selected are site reports made by Lanahan and Churchill while visiting individual agencies and an equipment proposal, submitted by the machine tool manufacturer Niles-Bement-Pond Co., concerning plain milling machines. Both bear perfunctory marginal markings, probably by Edison.

Related material can be found in E-11-18 (Battery Storage - Electric Vehicles - Promotional).

CALKINS & HOLDEN - 250 FIFTH AVENUE NEW YORK - ADVERTISING

February the fourth,  
1911.

Mr. L. C. McChesney,  
Manager Advertising Department

Edison Storage Battery Company

Subject - Newspaper and Magazine advertising

As requested by you yesterday, we are enclosing two estimates for the Edison Storage Battery advertising -- one covering a list of newspapers, and the other a list of magazines.

We are also enclosing proofs of Mr. Edison's advertisement set in two ways for the magazines -- one the square quarter page; the other the horizontal quarter page. If we can get top of column position on this horizontal quarter, we think it will be better than the other. If not, we would recommend the square space.

We have also set this advertisement in five inches, single column, for use in the newspapers.

In addition to this advertisement we have prepared one which we have put in type, which we think is a better presentation of the subject, and also enclose typewritten copy for two more.

We think Mr. Edison should be advised against running a standing ad. We do not believe anybody is able to write an advertisement that is good enough to run without change for any number of



Edison Storage Battery Co.....2/4/11.....2

insertions over one. The Edison Storage Battery is such a big subject, and has so many arguments in its favor, that we certainly should use our space presenting these arguments.

We are also doubtful about the catalogue. While this is an excellent piece of printed matter, we do not think it is sufficiently clear to give the average electric vehicle purchaser a complete understanding of the superiority of the Edison Battery. While it would be a good idea to offer to send this catalog to inquirers, we think we should send in addition a folder along the lines of the enclosed, which presents in a very interesting way the results of the tours which Mr. Edison conducted last fall. While the dummy we send is very rough, it could be made into a very attractive thing, and we believe it ought to have consideration in connection with this campaign.

The whole subject of entering the magazines with this Battery is very interesting to us, and we have no doubt, if a little more time was afforded, that we could work out a much more effective campaign than Mr. Edison has in mind. We hope, therefore, that we may be permitted to prepare other advertising for the spaces suggested, and include in our offer the distribution of the folder referred to above.

10/4  
Hogf.

Carlisle and Feeder

[ATTACHMENT/ENCLOSURE]

CALKINS & HOLDEN · 250 FIFTH AVENUE NEW YORK · ADVERTISING

2/4/11

The Edison Storage Battery Company  
Orange N.J.

Estimate for Newspaper Advertising - 1911

5" S.C. - 18 times - 1 Tag - 210 lines

*Sim. P. Col. 70 lines* *Once week 18 times*

| M<br>or<br>E: | City:        | Paper:                  | Net rate<br>per line: | Cost<br>of space<br>inc. comm. | Cash<br>Disc. |
|---------------|--------------|-------------------------|-----------------------|--------------------------------|---------------|
| E:            | Boston       | Transcript              | .18                   | \$180.18                       | 0%            |
| ME:           | "            | Herald                  | .225                  | 225.23                         | 5             |
| M:            | "            | Post                    | .22                   | 220.22                         | 3             |
| M:            | New York     | Sun                     | .27                   | 270.27                         | 5             |
| M:            | "            | Tribune                 | .225                  | 225.23                         | 5             |
| H:            | "            | Herald *                | .27                   | 270.27                         | 0             |
| E:            | "            | Post                    | .18                   | 180.18                         | 5             |
| M:            | "            | Times                   | .243                  | 243.24                         | 5             |
| M:            | Philadelphia | Record                  | .2125                 | 212.71                         | 2             |
| M:            | "            | North American          | .2125                 | 212.71                         | 2             |
| M:            | "            | Press                   | .2125                 | 212.71                         | 2             |
| M:            | Buffalo      | Express                 | .085                  | 85.09                          | 2             |
| E:            | "            | News **                 | .132                  | 132.13                         | 3             |
| E:            | "            | Times                   | .0985                 | 93.59                          | 2             |
| M:            | Rochester    | Democrat & Chronicle ** | .135                  | 135.14                         | 2             |
| M:            | "            | Union & Advertiser **   | .0765                 | 70.58                          | 0             |
| M:            | Cleveland    | Plain Dealer            | .1445                 | 144.65                         | 2             |
| M:            | "            | Leader **               | .102                  | 102.10                         | 2             |
| E:            | "            | Press                   | .1445                 | 144.65                         | 2             |
| M:            | Pittsburg    | Dispatch **             | .117                  | 117.12                         | 5             |
| M:            | "            | Gazette Times **        | .17                   | 170.17                         | 2             |
| E:            | "            | Chron. Telegraph        |                       |                                |               |
| M:            | Detroit      | Free Press              | .0985                 | 93.59                          | 2             |
| E:            | "            | News                    | .135                  | 135.14                         | 2             |
| E:            | "            | Journal                 | .102                  | 102.10                         | 2             |
| M:            | Chicago      | Tribune                 | .26                   | 260.26                         | 2             |
| M:            | "            | Record Herald           | .2665                 | 266.76                         | 2             |
| E:            | "            | Eve. Post               | .158                  | 158.15                         | 5             |

[ATTACHMENT/ENCLOSURE]

The Edison Storage Battery Co., Est. for Newspaper Adv.-1911..2/4/11..#2.

| M<br>or<br>E: | City:         | Paper:                | Net rate<br>per line: | Cost<br>of space<br>inc.comms. | Cash<br>Dis. |
|---------------|---------------|-----------------------|-----------------------|--------------------------------|--------------|
| M:            | Cincinnati    | Enquirer              | .17                   | \$170.17                       | 2 1/2        |
| M:            | "             | Commercial Tribune    | .102                  | 102.10                         | 2            |
| E:            | "             | Times Star            | .1715                 | 171.68                         | 2            |
| ME:           | Minneapolis   | Journal               | .0035                 | 98.59                          | 2            |
| ME:           | "             | Tribune               | .1105                 | 110.01                         | 2            |
| M:            | St. Louis     | Globe Democrat        | .17                   | 170.17                         | 2            |
| M:            | "             | Republic              | .168                  | 168.16                         | 2            |
| E:            | "             | Post Dispatch         | .187                  | 187.19                         | 2            |
| M:            | Denver        | Republican            | .068                  | 68.07                          | 2            |
| E:            | "             | Post                  | .0765                 | 76.68                          | 2            |
| M:            | Seattle       | Post Intelligencer ** | .11475                | 114.86                         | 2            |
| E:            | "             | Times                 | .102                  | 102.10                         | 2            |
| M:            | San Francisco | Call                  | .175                  | 175.18                         | 3            |
| M:            | "             | Chronicle             | .18                   | 180.18                         | 5            |
| M:            | "             | Examiner              | .226                  | 226.23                         | 5            |
| M:            | Los Angeles   | Times                 | .108                  | 108.11                         | 5            |
| E:            | "             | Express               | .1275                 | 127.63                         | 2            |
| M:            | "             | Examiner              | .099                  | 99.09                          | 5            |
|               |               |                       |                       | \$7,190.90                     |              |

585, 15 Jan 11

\* Double price for cuts.  
\*\* 1000 line rate.

45 papers + 13 = 585

585 / 7190.90 (120.00)

[ATTACHMENT/ENCLOSURE]

CALKINS & HOLDEN - 250 FIFTH AVENUE NEW YORK - ADVERTISING

2/4/11

The Edison Storage Battery Company  
Orange N.J.

Estimate for Magazine Advertising - 1911

| M<br>or<br>W: Publication: | Space:   | Times: | Cost per inser. |         | Cost all inser.   |
|----------------------------|----------|--------|-----------------|---------|-------------------|
|                            |          |        | Net:            | Gross:  | Gross:            |
| M: World's Work            | 1/4 page | 3      |                 | \$50.00 | \$150.00          |
| M: Review of Reviews       | 1/4 "    | 3      |                 | 62.50   | 187.50            |
| M: Scribner's              | 1/4 "    | 3      |                 | 75.00   | 225.00            |
| M: Century                 | 1/4 "    | 3      |                 | 62.50   | 187.50            |
| W: Outlook                 | 1/4 "    | 3      | \$45.00         |         | 148.50            |
| M: McClure's               | 1/4 "    | 3      |                 | 115.00  | 445.00            |
| M: American                | 1/4 "    | 3      |                 | 78.00   | 234.00            |
| W: Literary Digest         | 56 lines | 3      |                 | 63.00   | 207.00            |
| W: Saturday Eve. Post      | 56 "     | 3      |                 | 302.40  | 997.02            |
|                            |          |        |                 |         | <u>\$2,788.32</u> |

*Life*

56 " 3

56.00

167.00

[ATTACHMENT/ENCLOSURE]

2/4/11.- 5 -  
Edison Storage Battery Co.  
1/4 Page Maga. ad.

Nine Tenths of what to know about  
electric vehicles, is battery.

Formerly 50 miles on a charge  
was considered a good mileage average for  
electrics.

Today you can be sure of over  
a hundred - if the vehicle is equipped  
with the

Edison Storage Battery

Send today for our new book,  
which covers all you ought to know about  
batteries - and that's most of all you need  
to know about electric vehicles.

Edison Storage Battery Company,

....Lakeside Avenue, Orange, N. J.

[ATTACHMENT/ENCLOSURE]

2/4/11. - 5 -  
Edison Storage Battery Co.  
1/4 Page Magazine ad.

When you investigate electric  
vehicles ask the man

how far it will average  
on a single charge of the battery. If  
he answers "a hundred miles or better"  
and you know he's telling the truth,  
the vehicle is equipped with

The Edison Storage Battery.

Buy it. But first know  
all about batteries for the battery  
is "nine tenths of what to know about  
electrics."

Send for our new book about  
the Edison - and the others.

Edison Storage Battery Company,  
...Lakeside Avenue, Orange, N. J.

[ATTACHMENT/ENCLOSURE]

OK

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## Electric Vehicles Edison Storage Battery

If you contemplate purchasing an Electric Vehicle, investigate the Edison Storage Battery for driving it. The first cost of this battery is considerably greater than the ordinary lead acid combination, but its life is several times greater, and it is far

more reliable. It gives twice the mileage and it has made the Electric within the last two years the most desirable, the most reliable and cheapest vehicle to maintain both for family use and for trucking. For catalogues and other information, address

---

Edison Storage Battery Company, 121 Lakeside Avenue, Orange, N. J.

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[ATTACHMENT/ENCLOSURE]

## The Electric Vehicle

has become the most desirable, most reliable and cheapest to maintain of all power-driven vehicles. The

## Edison Storage Battery

has made it so. Though costing more than the lead acid battery, it has twice the mileage, half the weight and many times the life of any other battery.

### The Catalogue is free

Send for it and read it before you buy, or if you already have a vehicle with a

Edison Storage Battery Company  
Lakeside Ave., Orange, N. J.

*Accept to  
work this in  
direction*



*C + H.  
Always use Hyflaw  
in unloading this  
explosion.*

*1/2*

*Lead battery and want  
twice the mileage*

PROOF FROM CASHING & HOLDEN, NEW YORK  
ADVERTISEMENT TO OCCUPY 5" x 8"

IN *Newspapers*

DATE

*Cherry*



[ATTACHMENT/ENCLOSURE]

OK

---

## Electric Vehicles

# Edison Storage Battery

If you contemplate purchasing an Electric Vehicle, investigate the Edison Storage Battery for driving it. The first cost of this battery is considerably greater than the ordinary lead acid combination, but its life is several times greater, and it is far more reliable. It gives twice the mileage and it has made the Electric within the last two years the most desirable, the most reliable and cheapest vehicle to maintain both for family use and for trucking.

For catalogues and other information, address

Edison Storage Battery Company  
121 Lakeside Ave., Orange, N.J.

---

PEGGY FROM CALHUN & HOLDEN, NEW YORK

ADVERTISEMENT TO OCCUPY

IN *Magazines* *1/4 page*

DATE

E J. G. copy

[ATTACHMENT/ENCLOSURE]

**Our Booklet explains.**

If you expect to buy or if you now own an Electric with lead battery and want to double your mileage, send for our booklet

# The New Edison Storage Battery

## Tests of the "family electric" vehicle "Day Outing" Trip No. 1

MR. EDISON is conducting a series of tests of different makes of the "family electric" type of motor vehicles equipped with his new battery, to determine in actual practice just what mileage can be obtained with *evening* over all kinds of roads, including hills and level country, with this type of car.

These trips will be called "day outings" between two predetermined points and returns, on one maximum charge of the battery. In each case after the return of the vehicle over the scheduled route, it is run to a standstill to entirely exhaust the battery and determine what excess mileage it still retains—giving the user beforehand certainty of a full round trip with a safe margin of excess mileage to spare.

There will be twelve of these "day outings" trips conducted by Mr. Edison. They will be run at weekly intervals from points permanently equipped for charging, and the results published.

Up to the present, but two of the several makers of electric vehicles have equipped their cars to use the new Edison Storage Battery. These are the Anderson Carriage Company of Detroit, making the Detroit Electric, and S. M. Bailey & Company of Amesbury, Mass. Other makers will doubtless follow and Edison tests of their cars will be made later.

Both of the vehicles being used in these tests (the Detroit and the Bailey) were run 1,000 miles over various roads and steep grades before the tests were begun. The Edison Storage Battery Company has no interest in either of these vehicles, other than to prove that with the new Edison battery, the "family type" of electric, from now on, will be the car that can be relied upon, can be run by anyone after a few minutes' instruction, is absolutely safe, infinitely less expensive to maintain than a gasoline car and will still be in active service years after the gasoline car has jared itself to pieces.

### Results of "Day Outing" Trip No. 1 with Detroit Electric

Carrying two persons; total weight 2,460 pounds.

Start 40th Street and Lexington Avenue, New York, 7:28 A.M.

Returned to starting point 5:02 P.M.

Actual running time, 6 hours 58 minutes.

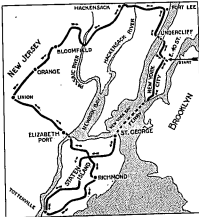
Distance traveled in covering this route, 84 miles.

Car, run to a standstill after completion of trip, showed 18 miles surplus.

Total mileage for the day, 102 miles on a single charge of the battery.

Roads generally good—many heavy grades.

**Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.**



**Results of  
Edison "Day Outing"  
Trip No. 2  
with Bailey Electric**

Total weight of car, carrying two persons, 2,345 pounds.

Start 40th Street and Lexington Avenue, New York, 7:40 A.M.

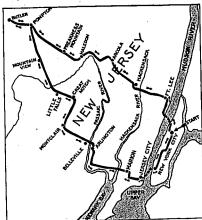
Returned to starting point 8:46 P.M.  
Actual running time, 5 hours 6 minutes.

Distance traveled in covering this route, 76 miles.

Car, run to a standstill after completion of trip to show margin of excess mileage still in the battery, gave 40 miles surplus.

Total mileage for the day, on a single charge of the battery, 116 miles.

Country mountainous and beautiful, many heavy grades, some 10%, but roads average good.



**Tests of the "family electric" vehicle  
equipped with**

# The New Edison Storage Battery

**"Day Outing" Trip No. 2**

**T**HIS is the second in the series of "day outing" trips being conducted by Thomas A. Edison, to establish the thorough practicability of the "family electric" type of motor vehicle equipped with the new Edison Storage Battery, as the car of the future.

These "day outing" tests are run over a scheduled route, the route in each case being shown on the accompanying map. After the return to the starting point on the completion of each run the car is continued on its run to completely discharge the battery—thus determining the excess mileage of which the

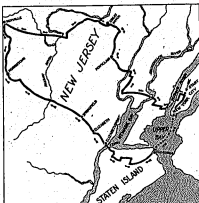
car is capable after accomplishing the scheduled route.

The cars now regularly equipped with the Edison Storage Battery are the Detroit Electric and the Bailey Electric—and these are used alternately in these "day outing" trips. The trip in this instance was made by the Bailey. Neither Mr. Edison nor the Edison Storage Battery Co. has any interest in either of these cars, other than to prove the great reliability of the electric vehicle with proper battery equipment, its simplicity and ease of operation, low cost of maintenance and long life, compared to the gasoline cars.

**Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.**

[ATTACHMENT/ENCLOSURE]

## Edison "Day Outing" No. 3



### Results accomplished on Edison "Day Outing" Trip No. 3 with Detroit Electric

Total weight of car with two persons, 2,448 pounds.

Start, 40th St. and Lexington Ave., New York, 7.25 A. M.

Returned to starting point, 4.50 P. M. Actual running time, minus time consumed waiting for ferries and stop for dinner, 6 hours 31 minutes.

Distance covered in accomplishing this route, 82½ miles.

Car, run to a complete discharge of battery after finish of route, gave a margin of 30 miles excess.

Total mileage for the day on a single charge of the battery, 122½ miles.

Fine landscape, good roads generally, but a number of stiff 6½ grades.

**T**HIS series of "day outing" test trips which Mr. Edison is conducting is to establish the fact that the "family type" of electric vehicle with proper battery equipment is the practical, dependable and economical vehicle of the present and the future. Mr. Edison has no interest in the companies producing the cars used alternately on these trips—the Detroit and the Bailey—other than to prove this fact. The Detroit and the Bailey are now regularly equipped with the new Edison Storage Battery. Other makers of electric automobiles will equip with the Edison Battery shortly, and similar Edison test trips will be made with their cars.

In these "day outing" tests the route, as shown in the map accompanying each of these

announcements, is laid out beforehand. The battery is given a maximum charge and the full route traveled. After returning to starting point the car is run to completely exhaust the battery, to show exactly how much more mileage the battery contained than was necessary to bring the car back to the starting point—the margin of *certainty*.

The high average of mileage which these tests are showing and the wide margin of excess mileage in each instance are clearly proving Mr. Edison's contention that the electric is the family car—the car anyone can operate and that almost everyone can afford to own and maintain. These tests are only made possible by the use of

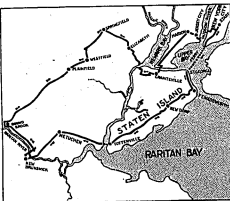
# The New Edison Storage Battery

Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.

## A Bailey Electric equipped with the Edison Storage Battery goes 139 1-2 miles on a single charge

Results accomplished on Edison "Day Outing"  
Trip No. 4, with Bailey Electric

Total weight of car with two persons, 2,317 pounds.  
Start 40th Street and Lexington Avenue, New York, 7:10 A. M.  
Returned to starting point 10:34 A. M.  
Actual running time, minus time consumed waiting for ferries and stop for dinner, 6 hours 24 minutes.  
Distance covered in accomplishing this route, 87½ miles.  
Car, run to a complete discharge of battery after finish of route, gave a margin of 11½ miles excess.  
Total mileage for the day on a single charge of the battery, 139½ miles.  
Some pretty country; roads on the average good.



**T**HIS is the best record yet in the series of "day outing" test trips conducted by Mr. Edison.

On trip No. 1 the car ran 102 miles on a single charge of the battery; on trip No. 2 it ran 110 miles; on trip No. 3, 123½ miles, and now on trip No. 4, 139½ miles—giving a margin of 11½ miles excess over the 87½ mile trip which was planned for the "day's outing."

In these "day outing" tests the route, as shown in the map accompanying each of these announcements, is laid out beforehand. The battery is given a maximum charge and the full route traveled. After returning to starting point the car is run to completely exhaust the battery, to show exactly how much more mileage the battery contained than was necessary to bring the car back to the starting point—the margin of certainty.

The cars now regularly equipped with the Edison Storage Battery are the Detroit Electric and the Bailey Electric—and these are used alternately in the "day outing" trips.

Neither Mr. Edison nor the Edison Storage Battery Company has any interest in either of these cars, other than to prove Mr. Edison's contention that with the right battery equipment the electric is the real family car, because of its absolute safety, because it can be run by anyone after a few minutes' instruction, because it has longer life than a gasoline car and costs infinitely less to maintain.

But there is only one "right" battery equipment—

# The New Edison Storage Battery

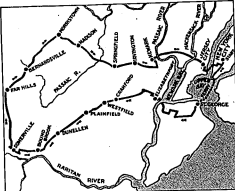
Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.

## Edison "day outing" trip No. 5

brings out another interesting record—Detroit Electric, on a single charge of the battery, goes 113 miles over a route with many heavy grades up to 8½ per cent, running against a head wind equivalent to 2½ per cent grade. The high average mileage that these "day outing" trips are showing would never have been possible to electric vehicles with equipment other than

# The New Edison Storage Battery

The present Edison Storage Battery is a perfect product, resulting from experiences covering a period of six years, during which time more than 30,000 Edison Batteries of the first or experimental type have been in successful use on over 400 trucks and other vehicles.



The cars used alternately on these trips are the Detroit Electric and the Buick Electric—because they are the vehicles already equipped with the Edison Storage Battery. Neither Mr. Edison nor the Edison Storage Battery Company has any interest in either of the companies

### Results accomplished on Edison "Day Outing" Trip No. 5 with Detroit Electric

Total weight of car with two passengers 2,448 pounds.

Start 34th Street and Lexington Avenue, New York, 7.30 A. M.

Returned to starting point, 6.03 P. M.

Actual running time, minus time consumed waiting for ferries and stop for dinner, 7 hours 22 minutes.

Distance traveled in covering this route, 98 miles.

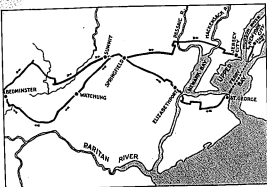
Car, run to complete discharge of battery after finish of route, showed 13 miles surplus.

Total mileage, for the day, on a single charge of the battery, 113 miles.

Roads generally good—many heavy grades,—strong head wind equivalent to 4½ per cent.

manufacturing these cars, beyond proving the advantage of the family type of electric vehicle, properly equipped, over the gasoline car and over the electric vehicle other than Edison Storage Battery equipped.

Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.



On Edison "Day Outing" Trip No. 6 the Bailey Electric goes 108 miles on poor roads, through hilly country, encountering many grades up to 15%, running against a constant head wind equal to 2% grade—another triumph for

## The New Edison Storage Battery

**T**HE New Edison Storage Battery should more properly be called the improved Edison Storage Battery, for it is a perfect development from the first or experimental type of Edison Battery, more than 30,000 of which have been in successful operation on over 400 commercial and other vehicles during the past six years. The vehicles used on these "day outing" trips are those already regularly equipped with the Edison Storage Battery—the Bailey Electric

and the Detroit Electric. Neither Mr. Edison nor the Edison Storage Battery Company has any interest in either of these vehicles, further than the firm establishment of Mr. Edison's contention that the family type of electric vehicle—the Edison Storage Battery equipped—is the car of the present and the future—the car that is absolutely safe, the simplest to handle and by all odds the most economical to operate.

**Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.**

### Results of Edison "Day Outing" Trip No. 6 with Bailey Electric

Total weight of car, carrying two persons, 2,345 pounds. Start, 40th Street and Lexington Avenue, New York, 7:31 A. M.

Returns to starting point, 3:56 P. M.

Actual running time, minus time consumed in waiting for ferries, dinner, etc., 7 hours 40 minutes.

Distance traveled in covering this route, 108 miles. Car, run to a standstill after completion of trip to show margin of excess mileage still in the battery, goes 04 miles surplus.

Total mileage for the day, on a single charge of the battery, 108 miles.

Country mountainous and beautiful, heavy grades, many 15%. Head wind equal to 9% grade. Roads mostly poor.



## Hill Climbing Test

with Bailey Electric

### 21 times up Fort George Hill

Fort George Hill is 2138 feet in length and 11% grade. This means the New Edison Battery lifted 2387 pounds of car and load, almost *one mile vertically* in 8 miles

**on one charge**

---

# The New Edison Storage Battery

---

## City Test

**on one 7½ hour charge**

with Detroit Electric

Ran 1½ to 2 hours every day for seven days.  
Cost of charge \$1.42, or 21 cents per day.  
Average speed 12.32 miles per hour—120 miles total.  
Total weight of car and the two passengers 2470 pounds.

**Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.**

## A Detroit Electric equipped with the Edison Storage Battery goes 121 miles on a single charge

### Results accomplished on Edison "Day Outing" Trip No. 8, with Detroit Electric

Total weight of car with two persons, 2,448 pounds.  
Start 40th St. and Lexington Ave., New York, 7:33 A. M.  
Returned to starting point 3:30 P. M.  
Actual running time, minus time consumed in stop for dinner, 8 hours, 34 minutes.  
Distance covered in accomplishing this route, 84 miles.  
Car, run to a complete discharge of battery after finish of route, gave a margin of 37 miles excess.  
Total mileage for day on a single charge of battery, 121 miles.  
Some pretty country; roads on the average good.

#### Previous Results

|                                                                          |     |     |
|--------------------------------------------------------------------------|-----|-----|
| Trip No. 1, Detroit Electric, Range 84 miles, Excess 18 miles, Total 102 | 102 | 102 |
| " 2, Battery " " " " " " " " " " " "                                     | 20  | 122 |
| " 3, Detroit " " " " " " " " " " " "                                     | 254 | 127 |
| " 4, Battery " " " " " " " " " " " "                                     | 115 | 115 |
| " 5, Detroit " " " " " " " " " " " "                                     | 84  | 100 |
| " 6, Battery (full charge) at times on Fort Greves Hill, 11 1/2 miles    |     |     |
| " 7, Battery (full charge) at times on Fort Greves Hill, 11 1/2 miles    |     |     |

In these "day outing" tests the route, as shown in the map accompanying each of these announcements, is laid out beforehand. The battery is given a maximum charge and the full route traveled. After returning to starting point the car is run more mileage the battery contained than was necessary to bring the car back to the starting point—the margin of surplus.

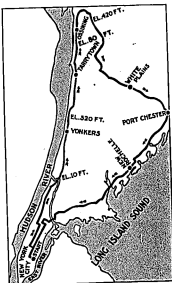
The cars now regularly equipped with the Edison Storage Battery are the Detroit Electric and the Battery Electric—and these are used alternately in the "day outing" trips.

Neither Mr. Edison nor the Edison Storage Battery Company has any interest in either of these cars, other than to prove Mr. Edison's contention that with the right battery equipment the electric is the real, family car, because of its absolute safety, because it can be run by any one after a few minutes' instruction, because it has longer life than a gasoline car and costs infinitely less to maintain.

But there is only one "right" battery equipment—

# The New Edison Storage Battery

Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.



Edison Test No. 9

# Six-day Tour

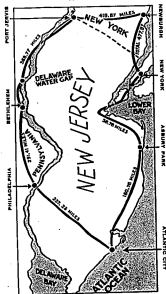
with Detroit Electric equipped with

# The New Edison Storage Battery

478 miles—average 68 miles per day

This run, from New York via Asbury Park and Atlantic City to Philadelphia, and return via Bethlehem, Port Jervis and Newburgh, shows the consistent dependability of the electric pleasure vehicle with the proper battery equipment over a period of continuous hard road service.

On this trip, through hilly and even mountainous country, some of the best and worst roads in Pennsylvania and lower New York State were covered. Yet in many instances, an average speed of 15 miles an hour was maintained, and the run from Atlantic City to Philadelphia, 62.62 miles, was accomplished at the rate of 19 1/2 miles an hour. This average speed for the distance is unprecedented for electric vehicles, even on city pavements, and would not have been possible with equipment other than the new Edison Storage Battery.



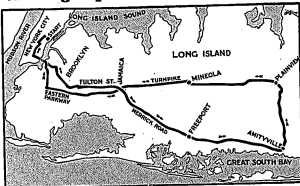
Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.

## Edison "Day Outing"—Test Trip No. 10

Bailey Electric covers 85-mile route, then gives 41½ miles excess—the margin of certainty—before complete discharge of battery; 126½ miles on a single charge of

# The New Edison Storage Battery

Average speed 14 miles per hour



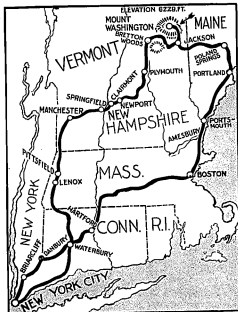
The mileage made on this hot Edison test trip, 126½ miles, brings up the average mileage for tests already completed from 117½ to 118½ miles on a single charge. In no instance has the mileage been less than 102 miles and this minimum was due to heavy grades encountered. Formerly, 60 miles was considered a good day's work for an electric vehicle. These tests which Mr. Edison is conducting are proving that the electric vehicle **has arrived**—and that the new Edison Storage Battery is its proper equipment.

## RESULTS OF EDISON "DAY OUTING" TRIP No. 10

Total weight of car, carrying two persons, 2,336 lbs.  
Start, 40th St. and Lexington Ave., New York, 7:12 a. m.  
Returns to starting point, 2:51 p. m.  
Distance traveled in covering this route, 83 miles.  
Car, run to standstill after completion of trip to show margin of excess mileage still in the battery, gave 41½ miles surplus.  
Total mileage for the day, on a single charge of the battery, 126½ miles.

Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.

# The New Edison Storage Battery



made possible this 1000-mile "Ideal Tour" and 7 miles of the 8-mile climb up Mt. Washington accomplished by "Detroit" and "Bailey" Electrics, proving by this remarkable performance that the electric vehicle with Edison Battery equipment will cover any route that a gasoline car can cover.

Of the prominent makes of electric vehicles now regularly equipped with the Edison Storage Battery—"Detroit," "Bailey," "Baker" and "Waverley"—two vehicles, a Detroit and a Bailey, started from New York on Sept. 17th and successfully completed what is known as the "Ideal Tour." The cars started in opposite directions, each carrying two men and 300 pounds of extra weight in tools, tires and clothing. Meeting at Bretton Woods, it was decided to attempt the climb of Mt. Washington—6,228 feet high, with grades varying from 14% to 27%. That an electric vehicle, equipped with a

2½ H. P. motor and its storage battery, should even attempt a climb that taxes high-powered gasoline cars to the limit, is unheard of. Yet 7 miles of the 8-mile climb were accomplished, the last mile being made impossible by blinding rains and terrific winds.

This remarkable performance proves that the electric vehicle is no longer a luxurious toy for city use, but, equipped with the Edison Storage Battery, is the practical car of the present and the future—the car that any one can operate and that almost everyone can afford to own and maintain.

**Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.**

58- advertising

# ELECTRICAL RECORD

PUBLISHED MONTHLY BY  
**THE GAGE PUBLISHING CO., Inc.**

Established 1887  
114-116 Liberty Street, New York

Chicago Office, Monastock Block

Thomas A. Edison, Esq.,  
Orange, N. J.

Dear Sir:-

The advertising of the Edison Storage Battery Company  
in the ELECTRICAL RECORD has been discontinued.

If you have any way of tracing results from your advertising, will you please see how the actual sales made through the ELECTRICAL RECORD compare with the actual sales made at the same expense through other papers.

Are you aware of the fact that the ELECTRICAL RECORD has a larger number of advertisers of electrical apparatus than any other publication in America - by more than 30% ?

Are you also aware of the fact that your Sales Department uses our Mailing Lists, which are loaned only to advertisers ? Our Monthly Bulletins of additions, changes and corrections enable that Department to keep their card indexes correct.

Ours, you see, is a double service - advertising and mailing list. Your Sales Department needs this service, and we respectfully request you to restore the ELECTRICAL RECORD to favor.

We ask this on the points of service, cost and efficiency.

Very truly yours,

THE GAGE PUBLISHING CO.

WTC/HS

*N. T. Bell*  
Secy & Treas.

*We are cutting down advertising  
just now as we Feb. 18th, 1911  
when we start we will  
start in again  
Mar 2/18/11*

Aug 17, 51

I could not get a better bid  
of 385 CANAL STREET  
NEW YORK than the price you  
offer as <sup>fair</sup> to the  
Messrs. Miller

For understand  
why I ask about the 1  
bond, carrying 5 shares of stock  
Edison Battery Co. A market  
price must be set for the  
purpose of settling Janner's  
estate. I am ready to  
take the bond at the price  
he paid but want the effort  
to get more if it can

be got. This for your information  
I bid par for the bond  
carrying 5 shares of stock. If  
you can get better bid for  
him please do so.

Sincerely  
J. J. Janner

DIVISION OF  
MANUFACTURES

Department of Commerce and Labor  
BUREAU OF THE CENSUS  
Washington

ELECTRIC INDUSTRIES  
T. C. MARTIN  
EXPERT SPECIAL AGENT  
222 W. 32TH STREET  
NEW YORK, N. Y.

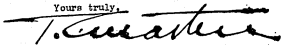
NEW YORK, N. Y. March 7, 1911.

W. H. Meadowcroft, Esq.,  
Edison Laboratory  
Orange, N. J.

Dear Mr. Meadowcroft:-

Please note the enclosed which I shall be glad to have you return to me. I cannot very well answer the question off hand but shall be glad to know if the figures quoted represent cells of batteries or numbers of plates or weight of plates. On the face, it is hard to tell just what the figure means. I might say that these figures are merged in other figures so that their identity is lost and the details of the business are not given away.

Yours truly,



Expert Special Agent.



25 BC  
DIVISION OF  
MANUFACTURES

Department of Commerce and Labor  
BUREAU OF THE CENSUS  
Washington

ELECTRIC INDUSTRIES  
T. G. MARTIN  
EXPERT SPECIAL AGENT  
128 W. 27TH STREET  
NEW YORK, N. Y.

NEW YORK, March 10, 1911.

W. H. Meadowcroft, Esq.,  
Legal Department  
Edison Laboratory  
Orange, N. J.

Dear Mr. Meadowcroft:-

I have yours of March 9th and am much obliged to you for giving me figures with regard to the Edison Storage Battery Company, which seems to be exactly what is needed at the Census Office.

Yours truly,

  
Secretary.

Battery - Inc.

EDISON STORAGE BATTERY COMPANY  
COST AND EXPENSES PER CELL ASSEMBLED

(ON A-4 CAPACITY BASIS)

MONTH OF MARCH 1911

MANUFACTURING COST OF CELLS:  
(Including Electrolyte)

Equivalent in A-4 Cells:-

|              |                   |                |
|--------------|-------------------|----------------|
| 1            | .....             | \$7.73         |
| 1 1/2        | .....             | 10.91          |
| 2            | .....             | 14.29          |
| 2 1/2        | .....             | 2.59           |
| 3            | .....             | 4.20           |
| <u>3 1/2</u> | <u>Cells.....</u> | <u>\$39.72</u> |

Average Cost per Cell A-4 Basis:-

\$39.72 ÷ 5 1/2 = \$7.56

BATTERY EQUIPMENT:

|                                                   |                 |
|---------------------------------------------------|-----------------|
| Trays, jumpers etc., and labor in assembling      | .26             |
| Selling Expenses per cell (A-4 Basis)             |                 |
| 9213 cells.....                                   | .637            |
| Shipping.....                                     | .102            |
| Free Goods.....                                   | .013            |
| Advertising.....                                  | .319            |
| Administration and General.....                   | .4445           |
| Laboratory Experimental Expenses.....             | .53             |
|                                                   | 2.045           |
| Rent.....                                         | .103            |
| Taxes.....                                        | .011            |
| Insurance.....                                    | .015            |
| Interest on Funded Debt.....                      | .271            |
| Cash Discounts on Sales.....                      | .144            |
|                                                   | .544            |
| Total Cost and Expenses.....                      | <u>\$10.404</u> |
| Average Amount received per cell (A-4 Basis)..... | <u>\$11.151</u> |

|                                       | March    | April    | May | June |
|---------------------------------------|----------|----------|-----|------|
| A 4 assembled                         | 3336     | 2586     |     |      |
| A 6 "                                 | 2668     | 3286     |     |      |
| A 8 "                                 | 562      | 570      |     |      |
| B 2 "                                 | 502      | 481      |     |      |
| B 4 "                                 | 1251     | 1196     |     |      |
| Equivalents in A 4                    | 9213     | 9373     |     |      |
| Manfy Cost = "                        | 69480.52 | 73281.62 |     |      |
| All expenses, not<br>(except returns) | 26566.87 | 25813.19 |     |      |
| Grand Total                           | 96047.39 | 99094.81 |     |      |
| Mfg. Cost per cell - A4               | 7.54     | 7.82     |     |      |
| Expenses " " "                        | 2.89     | 2.75     |     |      |
| Total Cost " " "                      | 10.43    | 10.57    |     |      |
|                                       |          |          |     |      |
|                                       |          |          |     |      |
|                                       |          |          |     |      |

Report of Messrs. Churchill & Lanahan

CABLE ADDRESS: "ZYNGIC" NEW YORK

## Edison Storage Battery Co.

TRADE MARK  
Thomas A. Edison

Orange, N.J., U.S.A. November 14, 1912.

Mr. Frank L. Dyer,  
c/o The Homestead,  
Hot Springs, Va.

Dear Mr. Dyer:-

The impression which we bring back from our trip is that for the most part the various agencies for the sale of pleasure electric cars are either indifferent to or unaware of the fact that they are no longer in a position to furnish the Edison battery. In general, we find they have the usual attitude of salesmen, making them antagonistic to anything which increases the selling price of their product, and in referring to the Edison battery if they admit it has a greater mileage than the lead batteries they point out the fact that they cost \$600. more and that the lead batteries had all the mileage which is required in a pleasure vehicle.

They state that as yet there are no charging facilities outside of the cities and that the electric cannot, therefore, be used in any way as a touring car and that the lead battery will give from 50 to 80 miles, which is far more than could be used in city work in any one day.

Almost universally the electric cars are kept in public garages and at the call of the owner at any time fully charged.

*file slow*  
*Prully*

F. L. Dyer - 2.

Usually, the first remark after the subject of the Edison battery is brought up is its added cost to the owner without giving the owner greater service than he could secure with the lead batteries. The long life of the Edison battery is offset by the guarantee of the lead battery people for 20,000 miles.

The adverse comments which we hear most frequently are that the Edison battery is very slow on hill work and sluggish in cold weather, that it is complicated, and the garages not being familiar with it have much difficulty in caring for it.

Of the forty agencies we visited, eight of them spoke in condemnation to the effect that in extremely cold weather they practically went out of commission, could hardly climb hills, and take far more current to charge than lead batteries. Two agents mentioned firms which having used the Edison batteries found them entirely worthless and are now using the lead batteries. One agent criticised the Edison guarantee as being so worded as to be practically worthless.

As the agents in the different cities of the same make of vehicle differ so widely in their opinions and comments of the Edison battery, it is evident that their remarks were not inspired from their home offices.

F. L. Dyer - 2.

The attached reports give you the results of our visits in detail, from which you will probably get the idea as we have, that for the most part the various agents speak more in ignorance than in malice towards the Edison Storage Battery.

Very truly yours,

*Henry Pausan*  
*Chauncey Kendrick*

LH/ARK.  
CC

✓

ELECTRIC VEHICLES

IMPORTANT TO INTENDING PURCHASERS.

*any trouble*

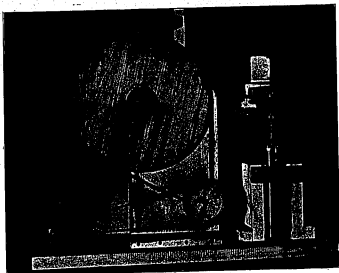
If you are buying an electric carriage or truck with an ordinary storage battery, insist that your contract shall provide for a vehicle that can be operated with either a lead battery or an Edison battery. The manufacturer can furnish a vehicle so made without ~~suffering any serious~~ ~~any hardship~~. It is only necessary for him to provide a motor and battery box suitable for either, and the benefit will be yours. The Edison storage battery is only half the weight of the ordinary battery, or with the same weight gives twice the mileage. Besides, it is perfectly reliable over a period of several years.

The output of the Edison factory for pleasure vehicles having been limited at the end of the last year, it was contracted for by the Anderson Electric Car Co. for the year 1912, but manufacturing facilities are being greatly enlarged to enable us during the coming season to supply to the public all the batteries that may be required.

We shall be glad to supply information about electric vehicles.

EDISON STORAGE BATTERY CO.

ORANGE, N. J.



*File Adv  
Memorandum*

## 1,776,000 "jolts" of $\frac{1}{2}$ inch each

Here is the apparatus used by Mr. Edison in testing the mechanical strength of the Edison Storage Battery. Like all his tests, the strain imposed was many times greater than will ever be met with in practice.

**The cell was raised and dropped one-half an inch 1,776,000 times—a million and three quarter half-inch jolts aggregating 74,000 feet.**

### EDISON BATTERY POINTS

It will **lift** per pound **instead of 3 and 4 times the lift.**

One-half the weight or double the power for the same weight.

A dead short circuit of a cell will not injure it.

Three year guarantee for trunk and wagon batteries.

No lead, no acid—consequently no acid fumes or corrosion of steel.

Nothing but steel, iron and nickel.

In a perfect solution.

No injuriousness to leather with an electrolyte.

At the exact density of the solution.

An actual increase of capacity in daily use, due to gradual improvement in the active material.

Batteries run under severe conditions, clear to excess of working conditions found in practically any other battery.

More capacity after 10,000 miles operation than when new.

No loss of active material due to disintegration.

No cutting apart of cells for examination—no warping of plates.

Overcharging does no harm.

Complete discharging does no injury.

Can stand indefinitely charged or discharged without injury.

Withstands the rough usage in daily practice because steel, iron and nickel. Lead only materials used.

Solves the electric vehicle problem because of reliability and low cost of maintenance.

An investment, not a running expense.

The Edison method combining light weight and rugged strength enabled the cell to go through the test uninjured.

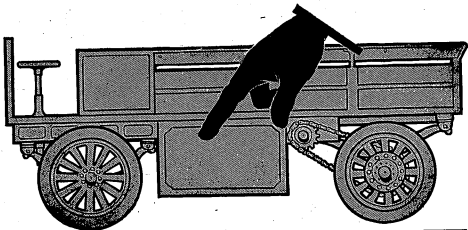
Neither its electrical capacity nor mechanical construction were impaired in any way, because steel, iron and nickel will endure shocks that heavy lead plates cannot possibly undergo.

Not to mention the disintegration of active material found in the old style lead batteries.

**The Edison Storage Battery Perfects the One Weak Link in the Electric Vehicle Chain**

**Edison Storage Battery Company, — Lakeside Ave., Orange, N. J.**





### The One Weak Spot in Electric Wagon Success

Everybody in the business knows what has retarded the advance to which Electric Vehicles have been rightfully entitled, —(1) heavy lead batteries that required constant supervision at the hands of an expert, and (2) even then a short life in heavy work of from 8 to 15 months at best—

Lead batteries could not be depended upon, not for any lack of skill on the part of the manufacturer, but because of the inherent defects in the principle involved. They were heavy in weight and rapidly decreased in capacity even under the expert supervision of skilled battery experts.

The weak spot that so checked Electric Vehicle progress ceased to exist with the advent of, the Edison Storage Battery, because this battery overcomes all the objections to the lead-acid combination. It has no lead to crumble; no acids to destroy. Therefore there is no corrosion, no dropping out of active material. The weight is one-half for the same output. The capacity, instead of falling off, increases with use, due to the better contact of the active materials and the conductors.

The light, rugged strength of the Edison Storage Battery is obtained by using steel, iron and nickel, constructed lightly but strongly, with due consideration to mechanical strength and electrical reliability.

#### EDISON BATTERY POINTS

16 watt hours per pound instead of 8 and 2 times the life.

Is the weight or double the power for the same weight.

A dead short circuit of a cell will not injure it.

Three-year guarantee for truck and wagon batteries.

No lead, no acid—consequently—no acid fumes or corrosion of steel.

Nothing but steel, iron and nickel in a porous solution.

No hydrometers to bother with or to the exact density of the solution.

An actual increase of capacity in daily use, due to gradual improvement in the active material.

Batteries run under severe conditions try in excess of working conditions found

in practice) show larger capacity after 10,000 miles equivalent than when new.

No loss of active material! Due to disintegration.

No cutting apart of cells for examination—or wearing of plates.

Overcharging does no injury. Complete discharging does no injury.

Can stand repeatedly charged or discharged without injury.

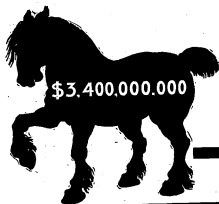
Withstands rough usage of the mechanical movements of steel, iron and nickel, the only materials used in vehicle batteries.

Proves the electric vehicle's ability and low cost of maintenance.

An investment, not a running expense.

Now, Electric Vehicles can run farther, faster and better, with absolute dependence upon the Battery, which can be discharged down to zero, overcharged, left standing without charging—in fact given the mistreatment which batteries are sure to get in practice, but which they could never withstand before.

**Edison Storage Battery Company, 104 Lakeside Ave., Orange, N. J.**



The value of all the horses in the United States is \$3,400,000,000—over 3½ billions of dollars!

The value of the hay and oat crops in 1909 was \$1,097,519,000—more than twice the value of the wheat crop!

These vast sums give an idea of the size of the trucking business, which is being constantly deflected from the Central Stations and Vehicle Makers, because in the past the only storage battery available was the lead-acid combination with its great weight, short life and multiplied troubles.

The electric wagon was all right—the electric motor perfect—but the battery was the weak link in the chain.

The Edison Storage Battery puts the electric wagon and truck business largely in the hands of the Central Stations for the future, because of its Light Weight, Rugged Strength and Reliability, without the trouble man as a constant factor and the repairs, washings, etc., heretofore linked in as an integral part of the storage battery business.

### EDISON BATTERY POINTS

- 120\* 16 watt hours per pound instead of 4 and 6 times the life, 16 the weight or double the power for the same weight.
- 121\* A dead short circuit of a cell will not injure it.
- 122\* Three year guarantee for truck and wagon batteries.
- 123\* No lead, no acid—consequently—no acid fumes or corrosion of steel.
- 124\* Nothing but steel, iron and nickel in a potash solution.
- 125\* No hydrometers to bother with as to the exact density of the solution.
- 126\* An actual increase of capacity in daily use, due to gradual improvement in the active materials.
- 127\* Batteries run under severe conditions (for in excess of working conditions found in practice), show larger capacity after 7500 miles equivalent than when new.
- 128\* No loss of active material due to disintegration.
- 129\* No cutting apart of cells for examination—no washing of plates.
- 130\* Overcharging does no injury.
- 131\* Complete discharging does no injury.
- 132\* Can stand safely charged or discharged without injury.
- 133\* Withstands the rough usage in daily practice because of the mechanical strength of steel, iron and nickel, the only materials used.
- 134\* Solves the electric vehicle problem because of durability and low cost of maintenance.
- 135\* An investment, not a running expense.

One Edison Battery will outlast 6 to 8 lead batteries in the hands of the layman, not to mention the tremendous item of repairs and maintenance required by even the best of the lead batteries

**EDISON STORAGE BATTERY, Lakeside Avenue, Orange, N. J.**

# One of Two Things

**The Edison Storage Battery increases the effective mileage of Electric Vehicles—or reduces the weight of the vehicle.**

This is because, for each pound of weight, it gives an active service which is twice the watt output that a lead battery is capable of giving in active service over a period of only one year. The Edison Battery is legally guaranteed for heavy-duty truck service for 3 years.

Such a tremendous advantage can be seized upon to reduce the total weight of the vehicle as well as that of the battery itself. Or to secure an increased mileage—either or both—within motor-voltage limitations.

The one weak spot that has held back all the advances to which Electric Vehicles have been rightfully entitled, has been the lead battery with its great weight, troubles and short life.

With a lighter and more rugged battery Electric Vehicles would, years ago, have come into their own. The electric motor would have done for them what it has done for street cars.

The Edison Storage Battery with its light, rugged construction combines minimum weight with long life and reliability.

The legal guarantee given for the Edison Storage Battery in truck service is 3 years, but the actual, practical life is, of course, much longer. If this were not so, the Edison Company could not afford a 3-year guarantee. The extra life of the Edison Storage Battery is as much an advantage to the customer as it is to the company making the guarantee.

The maintenance of storage batteries in heavy-duty trucks has been estimated by truck manufacturers at 109 per cent. per annum. This prohibitive and destructive depreciation has been eliminated by Mr. Edison's eight years of unremitting work on the storage-battery question.

To-day the pleasure vehicle or truck manufacturer, as well as his customer, can count upon his battery as being an investment and not a running expense.

## EDISON BATTERY POINTS:

45 watt hours per pound instead of 8 and 6 times the life.  
One-half the weight or double the power for the same weight.  
A small short circuit of a cell will not injure it.  
Three-year guarantee for truck and wagon batteries.  
Resists to acid—consequently—no acid fumes or corrosion of steel.  
Nothing but steel, iron and nickel in a porous solution.  
No hydrogen gas to bother with as to the exact density of the solution.

An actual increase of capacity in daily use, due to gradual improvement in the active material.  
Batteries run under severe conditions due to excessive overvoltage conditions found in practice—allow larger capacity than 25,000 miles equivalent than when new.  
25 times of active material due to disintegration.  
No cutting apart of cells for examination—no washing of plates.

Overcharging does no injury.  
Complete discharging does no injury.  
Can send heavily charged or discharged without injury.  
Withstands rough usage in daily practice because of the mechanical strength of steel, iron and nickel, the only materials used.  
Solves the electric-vehicle problem because of reliability and low Cost of Maintenance.  
An investment, not a running expense.

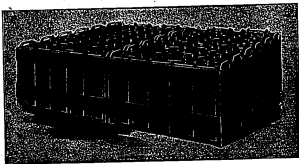
## Edison Storage Battery Company

104 Lakeside Avenue

Orange, N. J.

# The Edison Storage Battery

For Electric Vehicles of Every Type



Whether it's a five-ton motor truck, an electric delivery wagon or an electric runabout; whether on a long continuous haul or a run broken up by many short stops and quick starts, the vehicle equipped with the Edison Storage Battery will deliver efficiency and reliability in a degree beyond comparison with any other battery equipment and at a far lower operating cost.

## Read this extract.

regarding the run of one of the Macy Department Store's delivery wagons equipped with the Edison Storage Battery:

Recently a wagon was sent out, leaving the store at about 8 A. M.; it covered 72 miles out and back, up hill and down, making 45 stops for deliveries, and returned to the garage by 9:30 P. M.

## And this

Healy & Co., the high grade carriage builders, of New York, recently made a trip from New York to Philadelphia in one of their broughams equipped with Edison Storage Batteries. The brougham with driver and two passengers weighed 3,850 pounds. The trip was made in 8 hours and the distance covered was 104½ miles. The coils, which were recharged at the beginning of the trip, were not "boosted" on the way and at the end it was found that 15 additional miles could have been covered on the original charge. The batteries were recharged the same night and the return trip made the next day.

Many old line carriage builders are now contemplating taking up the family electric carriage, since the introduction of the Edison Storage Battery permits of its successful use, rather than the gas car with its uncertain future and the complications and high cost of maintenance.

## For Ignition

For ignition of gasoline cars, motor boats and stationary gas engines, the Edison Storage Battery gives the most reliable and economical service. It gives a hot blue spark that unflinchingly ignites the weakest mixture, effecting a big saving both on current and fuel.

We are prepared to guarantee the satisfactory operation of Edison Storage Batteries over a period of years.

## Lighting

For search lights, head and tail lamps and incandescent lighting of enclosed cars, the Edison Storage Battery should be an important part of the equipment of every motor vehicle.

Our booklet giving full details, prices, etc., will be sent if you'll ask for it. Write us to-day.

**Edison Storage Battery Co., 106 Lakeside Ave., Orange N. J.**

**Edison General File Series**

**1911. Battery, Storage - Electric Vehicles - General (E-11-16)**

This folder contains correspondence and other documents relating to the commercial and technical development of Edison's alkaline storage battery and its use in electric vehicles. Most of the documents concern electric vehicle manufacturers, market development, and the products of rival battery makers. Included are assessments of the Phaeton (or touring car) made by S. R. Bailey & Co. of Amesbury, Massachusetts; promotional material for the Klaxon automobile horn, invented by Miller Reese Hutchison; and discussion of marketing practices involving central stations of the Edison Electric Illuminating Co. of Boston. Additional items pertain to the Electric Storage Battery Co. of Philadelphia, its corporate investors, and the promotion of its Ironclad-Exide battery. The correspondents include Arthur I. Clymer, an investor in the Edison Storage Battery Co.; Louis A. Ferguson of the Commonwealth Edison Co. of Chicago; advertising executive Converse D. Marsh; and longtime Edison associate T. Commerford Martin. There is also a postcard written by Edison's son Charles while in Morristown, New Jersey, testing an electric wagon.

Approximately 80 percent of the documents have been selected. The items not selected include duplicates, unsolicited correspondence with no substantive reply, miscellaneous credit reports, and blank questionnaires.

Auto Tests

CAROLINA POWER & LIGHT COMPANY.

Ans 1/7/11

RALPHIGH, N. C. Jan. 14

Mr. Thomas A. Edison,  
Orange, N. J.

Dear Sir:-

Some time ago you wrote the above company, of which I am president, something about coming through here and wishing to charge your electric vehicle. I saw a man who had been in charge of electrical power at some point in Virginia and he said that he had heard from you and that you were coming through in your electric vehicle in a few days. If you are coming through this way, I would be glad to know by return mail about what time I may have the pleasure of seeing you. The company has no mercury arc rectifier, but I have for an electrically driven vehicle of my own and will be glad to extend to you every courtesy in its use.

Yours very truly,



President.

*Not coming through NC  
but have <sup>JAN 16</sup> good numbers  
then need <sup>16</sup> England  
apparently if also  
supply wanted the  
data in case  
we showed  
new electric  
with*

B.S.  
Exide

*file lead battery at S. Smith.*

THE  
"Ironclad-Exide"  
BATTERY

The Latest Development  
in  
Electric Vehicle Batteries  
By  
BRUCE FORD

Paper presented at the Meeting of  
The Electric Vehicle Association of America  
New York, January 17

1911

## The "Ironclad-Exide" Battery

THE LATEST DEVELOPMENT IN ELECTRIC  
VEHICLE BATTERIES

By BRUCE FORD

Paper presented at the Meeting of The Electric Vehicle Association of  
America, New York, January 17, 1911.

It was my privilege last October to present to this association a paper on the Electric Vehicle Battery, and announcement was made of a new battery which The Electric Storage Battery Company were shortly to put upon the market, and of which great things were to be expected. The time has now come when we can describe in detail the construction and operation of the new battery, together with an outline of its novel and advantageous features. The name under which this new battery is being presented is the "Ironclad-Exide," which has been considered especially appropriate in view of its great durability.

The new battery is of the lead sulphuric acid type, and its principal feature of novelty resides in the construction of the positive plate, together with other features of mounting and connecting, which will be brought out later.

The flat plate form was many years ago recognized as the best electrode for both positive and negative plates. Two forms of design have been in vogue for many years. *First*, The plain plate or slab, and, *Second*, A plate composed of a number of parallel bars or rods laid side by side and mounted in a suitable frame. Where the latter design has been employed, it has usually been for the positive electrode or pole plate. This has been true in both the lead sulphuric acid type of battery and also in the



alkaline battery. Reference may be made to the Waddell-Entz type of alkaline battery (1889-1890) in which the active material was in the form of a cylindrical pencil, and also to the Currie plate of the lead sulphuric acid class (1890-1891). This particular example is chosen since it is among some of the older patents owned by the makers of the "Exide" and the "Ironclad-Exide" Batteries.

The new "Ironclad" positive plate is of this design. Its grid is composed of a number of parallel vertical metal rods, united at their tops and bottoms integrally to top and bottom frames, the top being supplied with the usual conducting lug. Each vertical rod forms a core surrounded by a cylindrical pencil of peroxide of lead active material, which in its turn is enclosed by a hard rubber tube supplied with a multiplicity of fine horizontal laminations to provide access for the electrolyte to the active material, and passages for the flow of current during the charge and discharge of the plate. The rubber tube fits very snugly upon the active material, and its elasticity allows a certain come and go, maintaining its relation with respect to the active material during the alternate expansion and contraction of the latter in the process of charge and discharge.

The cylindrical form is peculiarly adapted to perform this function, and the amount of electrolyte surrounding each tube is just about the correct proportion for the active pencil. Each rubber tube is furnished with two oppositely disposed vertical ribs, which serve to stiffen and strengthen the laminated tube and act as separators, entirely taking the place of the ribs commonly provided upon the separators of cells using plain flat plates.

The negative plate is of the form used successfully for so many years in the "Exide" Battery, but in order to enable it to withstand not only the increased capacity, but also the greatly increased life of the new "Ironclad-Exide" positive plate, it has been made somewhat thicker.

The grid of the negative plate is of the standard "Exide" design, facial horizontal bars on one face of the plate being in staggered relation to the bars on the opposite face, the whole being united by vertical ribs at intervals.

The wood separator, consisting of a plain sheet of veneer of appropriate thickness, is interposed between the face of the negative plate and the vertical ribs of the rubber tubes of the positive plate.

The positive and negative plates respectively are united into groups, their lugs being burned to pillar straps in the ordinary way.

An improvement on the pillar strap has been incorporated for the "Ironclad-Exide" battery, by slightly pointing the tops of the pillars, thereby making it somewhat easier and quicker to burn the connections. This modification is also being incorporated in the straps for standard "Exide" cells.

The connector used in the "Ironclad" Battery is not rigid, as it is in the "Exide" Battery, but is made of thin sheets of copper lead plated to protect the copper against corrosion, and provided with an alloy terminal at each end recessed to receive the pillar of the strap, to which it is integrally burned.

A battery assembled with these connectors has a very neat and businesslike appearance.

The characteristics of the cell in discharge are similar to those of other types of lead storage batteries, the potential at the normal four hour rate starting well above two volts and maintaining a fairly uniform value throughout the discharge until toward the end, when it drops more rapidly. At 1.75 volts, the cell is practically discharged.

Similarly its characteristics during charge are like those of other lead batteries, the voltage remaining fairly uniform throughout the major part of the charge and rising rapidly to its final value toward the completion of the charge.

The internal resistance of the cell, being about the same as that of an "Exide" cell of corresponding size, the variation in capacity with change in rate is about the same. While its capacity decreases at a less than constant rate of change with increasing rate of discharge rate, yet its capacity becomes greater at an increasing rate as the discharge rate becomes less. This is a valuable characteristic of the lead cell when the elapsed time of discharge is extended.

*Revised  
cellular battery  
in this  
connection*

The capacity of all lead cells varies slightly with changes in the temperature of the electrolyte, and the change in capacity besides being comparatively small for comparatively wide variations in temperature, is almost uniform and so continues beyond any ranges to be met even under the most extraordinary conditions.

The new battery is rated initially at four and a half hours at a current corresponding to the four hour rate of an "Exide" battery of the same size. For example, an MV "Ironclad" positive plate is rated at 7 amperes for four and a half hours. As the battery is worked, the capacity will increase to from five and a half to six hours or even more. Cases have been recorded under somewhat special conditions where the capacity has reached seven hours at this rate before beginning to decrease.

The gain in capacity is not merely temporary, and although increasing at a comparatively rapid rate it decreases very slowly, so that the actual capacity is considerably above the rating for practically the entire life of the plates.

The dimensions of the elements of the new battery were proportioned to make "Ironclad-Exide" elements interchangeable with those of the "Exide," so that plates from an "Exide" battery can be renewed with a proper fitting element of the "Ironclad-Exide" type. This has been accomplished by making the new plates in both MV and PV sizes, and of appropriate thickness to be mounted upon the same plate center spacing as that of the "Exide." Since the outside negatives in the "Ironclad" are of the same thickness as the negatives of the "Exide" battery, the overall dimensions of an "Ironclad" element are therefore the same as the over all dimensions of an "Exide" element having the same number of plates.

Since the "Ironclad-Exide" battery will give four and a half hours at the four hour rate of an "Exide" of the same size, the capacity is 12 1/2 per cent. more. This relation holds throughout any practical range in variation of rate, since, as already stated, the internal resistance of the two batteries is practically the same.

*Max. at about  
200 runs in  
life of 900  
runs.  
30% or 25%  
more than these  
actual.*

The weight of an "Ironclad" battery is about the same as that of an "Exide" battery of corresponding size, a 9 MV "Ironclad" cell complete weighing less than one pound more than a 9 MV "Exide" cell.

It is in durability and decreased maintenance expense and trouble that the "Ironclad" battery will demonstrate its greatest value. In number of discharges its life will be from two to three times that of the "Exide." On account of its greater rated output and also on account of its greater percentage rise above its rating, the ampere hour life (or, in other words, in mileage life) should be over three times that of the "Exide."

This battery has advantages never before realized in any lead storage battery, and the results have been accomplished without sacrificing any of the valuable characteristics of the lead cell, which have enabled it to maintain its prestige for the last thirty years or more. These advantages include:

- High individual cell voltage.
- Low internal resistance.
- High efficiency.
- Ability to discharge at very high energy rates.
- Increased capacity at excessive energy rates.
- Freedom from injury by excessive discharge rates up to and including the short circuit current, which is many times that obtainable from any other type of storage battery.
- Immediate recovery from effects of overload.
- Low coefficient for temperature correction and uniformity of its value, there being no critical low temperature, below which the battery will be inoperative.

*showed from  
curve from  
0 to 100%*

Accessibility in case repairs are necessary.  
Small danger of explosion.

A dilute sulphuric acid electrolyte which has the following advantages:

Variation in specific gravity, which, when measured with a hydrometer, gives an indication of the state of charge or discharge of the cell.

No injury by exposure to air.

Relative freedom from injury to hands or woolen clothing.

*Initial W.M. per lb. 9 1/3  
Max. " " " 12 to 12 1/2*

No soluble substances in the electrolyte to crystallize out and form a deposit.

In addition to the above features, the public have already learned and understand the simple art of caring for the lead acid battery.

The instructions for the care and operation of the "**Iron-clad-Exide**" battery are very simple. The retention of the active material restricts shedding, and the result is that these batteries will rarely, if ever, require cleaning. The rubber sheaths being of insulating material, the danger of internal short circuits is therefore reduced. By observing the few salient features of operation with which the public are on the whole already very familiar, the new battery becomes a very reliable and perfect piece of apparatus.

This point may be emphasized by calling attention to the very small size of the instruction book for the care and operation of the battery.

---

A. I. CLYMER  
VAN WERT, OHIO

*Ans 1/11*

Our competitors are very active & send men around  
to prejudice people & they are holding out all  
kinds of special inducements, to prevent vehicle  
people using over batteries. The Woods people  
are very unfair & have done everything  
possible to hurt us, but lately they have  
acted a little better. Time will bring things

Mr. Thomas A. Edison,

Orange, N. J.

My dear Mr. Edison,

I think the enclosed will be of interest  
to you in connection with the Woods ad in Chicago Record-Herald,  
which I recently mailed you, -- wherein you may remember they  
endeavored in the boldest way to prejudice the public against  
the Edison battery. Just before that, I inquired for their  
catalog. Then, upon noting their efforts to hurt the Edison

I wrote them that while I had no reason to doubt the quality  
of that portion of the Woods car manufactured by them,  
I was greatly surprised to see their public attitude against  
the product of a name which ~~was well known~~ *was well known* and  
a product which was not in competition with any article in their  
line of manufacture. I intimated my belief that this procedure  
would surely prejudice the public against the Woods Co. and their  
product. They replied that they would be only too glad to equip  
their cars with Edison batteries whenever desired, etc.

I noted, also, ~~that~~ in your ad in the Record-  
Herald following my sending you the Woods ad, that you called atten-  
tion to the attempt being made to prejudice people against the  
Edison battery. I believe they have since abandoned these tactics

Mr. Edison, -2-

A. I. CLYMER  
VAN WERT, OHIO

--publicly at least--and am pleased to note, in the enclosed "follow-up" (which of course is not a personal letter,) that they have come down quite handsomely -- for them.

I hope that there is a largely growing demand for the Edison, for trucking, as it occurs to me that this use of the battery will be of three-fold value to the Company :

First, there is a pronounced disposition on the part of auto pleasure-carriage builders to give large attention to trucking and light delivery -- the beginning of a world-wide revolution in urban merchandise handling, and this is the Edison's great opportunity to take a prominent place as a commercial motive power;

Second, the extraordinary requirements for power, mileage, lightness and endurance give the Edison opportunity to demonstrate its peculiar advantages in these respects; and

Third, I believe it will be a tremendous advertisement for the Edison, to be able to refer in a large way to the multitude of manufacturing, importing, wholesale and retail establishments of national note, who have adopted the Edison storage battery. Such an array of well-known names will be very impressive.

Yours very sincerely,

P.O.Box 351



[ATTACHMENT/ENCLOSURE]

Auto-  
Woods

SALES DEPARTMENT

TELEPHONE CALUMET 1643, PRIVATE EXCHANGE

**WOODS MOTOR VEHICLE COMPANY**  
OF ILLINOIS

GENERAL OFFICES, 2515 2521 CALUMET AVENUE

CHICAGO, ILLINOIS

CARL J. METZGER  
GENERAL SALES MANAGER

Jan 17, 1911.

Mr. A. I. Clymer,  
Van Wert, Ohio.

Dear Sir:--

You have undoubtedly observed that there is a great variety in the battery equipment of Electric Cars. Unless other things are taken into consideration, it may be confusing to you to understand these deviating selections on the part of the manufacturer. For your consideration, therefore, we call the following to your attention.

A wide car, that is, one with a great seating capacity, has more wind resistance than a narrow one, and for that reason requires more power to propel it.

A frail tire causes the car to consume less power than one which is of a more durable construction. The power that the car consumes is not in proportion to its weight; that is, doubling the weight of a car does not double the power that it consumes.

In designing the Woods Electric, we had in mind all along the matter of low operation cost, and at the same time a large and comfortable body.

To build a large and comfortable body means power. A low operating cost means solid tires and a battery with heavy and stable plates.

For all of the above reasons a large battery equipment is necessary, namely, 40 cells of the 9 M.V. Exide.

We use 40 cells of battery because this can be more economically charged from 110 volt direct current. Where this reason would not apply, as when charging from alternating current with a rectifier, the advantage obtained when the Watt capacity is equal (as would be the case with similar tire equipment and wind resistance) is as follows:-- Greater operating efficiency due to higher voltage; reduced size of electrical parts, which in a measure compen-

[ATTACHMENT/ENCLOSURE]

FORM 133-20M-1-10.

WOODS MOTOR VEHICLE COMPANY  
CHICAGO

SHEET NO. TO

sates for additional weight of battery and greater life of positive plates due to series operation.

Battery plates are made in various thicknesses. Taking the standard jar, it is possible to put in either nine, eleven or thirteen plates depending upon which thickness is used. The fewer plates represent a greater life, and at the same time a lower renewal cost.

When we first began to manufacture Electric Vehicles, we were entirely alone in the Electric Vehicle field. Our Engineers adopted a forty cell equipment for obvious reasons. Our experience of thirteen years has never shown us that our first idea was anything but absolutely right. There is not another Electric Vehicle Manufacturer to day who for more than two seasons has used the same battery equipment, and the tendency is toward the forty cell battery equipment by all the vendors of Electric Cars who can arrange to have the car they represent equipped in that manner.

This is mentioned to show you that Woods Cars are designed along predetermined engineering principles rather than by a cut-and-dry method.

In this connection we beg to state that whereas we have always heretofore furnished the type of battery described above, we are not unmindful of the fact that the new Edison Battery is being given wide publicity at the present time and in common with all other manufacturers of Electric Cars, we very earnestly hope that the claims which are being made for this battery will be realized in actual results. We are therefore now building our cars to accommodate the Edison Battery and if our customers desire this Battery will be glad to supply it at the additional cost of same, although for the present our preference is for the Lead Battery which is a known quantity and has proven its worth.

If there are any points in regard to our Battery equipment not entirely clear to you, we should be glad to have you write us and our Engineering Department will take pleasure in sending you a report that will specifically cover your inquiry.

Very truly yours,  
WOODS MOTOR VEHICLE COMPANY.

  
General Sales Manager.

~~260~~  
142  
January 21st, 1911

Mr. Churchill:

Attached herewith please find half a dozen copies of leaflet that we have just had printed and which we expect to send out to Klaxon Horn owners.

HRL/GPW.  
*HRL*



[ATTACHMENT/ENCLOSURE]

MILLER REESE HUTCHISON  
ENGINEER  
80 CHURCH STREET  
NEW YORK

CABLE ADDRESS "MARRACON" NEW YORK

December 14th, 1910

Edison Storage Battery Co.,  
West Orange, N.J.

Gentlemen,

On May 1st., 1910, I placed one of your B-4, 5 Cell Ignition Batteries on my automobile, for operating my Klaxon Warning Signal.

Since that time, now practically eight months, my car has been driven approximately 12,000 miles in daily service.

During this entire period I have never put a drop of water in the batteries, AND HAVE NEVER CHARGED THEM.

They have never failed to operate the Klaxon, and are today up to full voltage and evidently good for several months more, before re-charging will be necessary.

I consider this a wonderful performance and, as the inventor of the Klaxon, cannot too highly recommend your battery for use therewith.

Very truly,



[ATTACHMENT/ENCLOSURE]

May we send you a  
Catalogue and other  
information about the  
new Edison Storage  
Battery?

Edison Storage Battery Co.  
101 Ashland Avenue,  
Orange, N. J.

Miller Reese Hut-  
chison invented the  
famous Klaxon Horn  
for automobiles.

Read what Mr. Hut-  
chison says about  
the Edison Storage  
Battery.

Stamp Battery  
1d on  
21/1/11

Recd at AVO  
Jan 23. 1911  
Mr. T. A. Edison  
Orange N. J.

C/o W. Arter  
177 W. Boylston St  
Worcester, Mass.

From our experiments  
on electric vehicles  
there is very little  
regeneration as coasting  
is 100% efficiency  
& we do nearly as well  
as with regeneration

Dear Sir

For some considerable time, I have made a special study of the problems, in connection with "Regenerative control or braking of electrically propelled vehicles" In my investigations I thoroughly analysed the -

- (a) Raworth system
- (b) Lundell "

Both Raworth, & Lundell, recognize that a shunt wound motor, although, quite suitable for regeneration, exhibits a very poor performance, as compared with the series motor for motoring purposes; The well known automatic variable gear ratio effect of increase of field strength, with increase of current, & consequent decrease of speed, (thus reducing peaks, loads) which is a valuable inherent quality of the series motor, gives the latter a great advantage, over the shunt motor for general traction work.

(2)

To overcome this defect Raworth & Lundell compounded their motors, thus combining the valuable features, of the shunt & series field coil. Neither system however appears to have met with any great success for the following reasons.

(1) Owing to restricted space on the motors, the full advantages of compounding cannot be effected or realised.

(2) The shunt current being under the motor-man's control, ~~renders the~~ <sup>allows of an</sup> abusive use of the motors, in the hands of a careless motorman.

(3) The shunt current is a source of great waste; on the trials of the Lundell system which is a double series parallel system, (Double commutator motors employed, the object in view being to avoid series rheostat losses) the saving effected in series rheostat losses, was just balanced by the increased field losses.

I have devised a system, which I consider is a great advance on either of the two cited above. It may be briefly characterised by the following points.

- (a) Simple series motors employed
- (b) Adaptable ~~off~~ for both D.C. or A.C. (single phase) work
- (c) Automatic control, there being only one regenerative notch on the controller, the

(3)

regenerative output being automatically controlled, by a differential magnetic action of the field coils. The regenerative current increasing, as the speed decreases, this being a valuable feature from a commutation point of view.

(d) As there is only one regenerative motor, the system is foolproof, & the abusive use of the motors is an impossibility.

(E) No additional complications to the car equipment with the exception of a small field coil group, & an extra notch on the motor controller.

As I know you are interested in ~~the~~ any developments in <sup>the</sup> electric traction field. I should be very glad to have an opportunity to explain my system to you. I may say I have already tried to interest The General Electric Co. & The Westinghouse Co., but as neither have answered ~~my~~ letters, I can only conclude that my scheme does not appeal to them. Trusting you will give me an opportunity to make good.

Yours faithfully

S. T. Webster

*auto-Nestor*  
G. E. NESTOR, PRESIDENT

GEORGE H. STODDARD, VICE-PRES. & GEN. MGR.

## Nestor Electric Vehicle Company

### EDISON STORAGE BATTERIES

LANDSEN "EDISON BATTERY" TRUCKS  
BAILEY "EDISON BATTERY" BUGGIES  
FEDERAL "EDISON BATTERY" CAR CO.

137 HAYES STREET, NEAR VAN NESS AVE.  
TELEPHONE MARKET 9173

SAN FRANCISCO, CAL. Feb. 4, 1911.

Mr. Harry F. Miller,  
c/o Edison's Laboratory,  
Orange, N. J.

My dear Harry:

I take pleasure in introducing to you Mr. George H. Stoddard, general manager of our company. He is back there on a mission, trying to arrange the financial end of the company.

You will find him an energetic gentleman and any favors you may show him will be greatly appreciated by me.

With kindest solicitation for your family and yourself,  
I beg to remain,

Yours sincerely,

*G. E. Nestor*

304 - Ed Rand  
F. EVERETT CONDIT  
TELEPHONE  
87-W CALDWELL

MRS. FILMORE CONDIT  
TELEPHONE  
827-R MONTCLAIR

**WESTOVER LAND OFFICE**

Caldwell National Bank Building  
CALDWELL, N. J. Feb. 11, 1911.

Mr. Thomas A. Edison,  
West Orange, N. J.,

Dear Sir,-

Will you kindly recommend an electric automobile using  
your new storage battery, and suitable for a woman to operate.  
Your attention will be appreciated,

Yours very truly

Edw. R. Condit

*Ans  
2/14/1911  
Honny and her  
Battery Calalogues*

*There are 4 good automobiles for family  
use on the market,  
The Bailey of Amherst Mass, open  
about the 1000 of Indianapolis  
both closed & open, The Baker  
of Cleveland Ohio ditto  
& the Anderson Carriage Co  
of Detroit all these take  
the new Edison Battery -  
~~you can see for Calalogues  
to Bailey Electric Automobile  
Amherst Mass.  
Baker Electric Co  
Anderson Carriage Co  
Detroit  
Edison Electric  
and Chicago~~*

Auto  
Tests

Say we made the test  
through New England  
Hills 2 miles

Mr. Thomas A. Edison

Dear Sir,  
August 12<sup>th</sup> 1914

I saw a ~~type~~ <sup>copy</sup> written letter with  
your name signed to it, dated  
August 12<sup>th</sup> 1914. That you was  
about to make a number of touring  
tests with several Electric Automobiles  
equipped with your new type of battery.  
I watch the papers to find out when  
you would come, but failed to see you.  
I was sorry for I did want your  
Electric Automobiles shown up here.  
There are plenty of the other kind, but  
no Electric. Parties that handle the  
other kind of Autos, say that Electric  
are not practical, in climbing the  
hills in New Hampshire & Vermont.  
But I think they can.

Would you please tell me how  
many miles your latest batteries  
will run on one charge with a car  
that will carry two or four people,  
over hills or by roads. The man  
you wrote to, Mr. W. A. Colby, Supt of  
the Lancaster Jefferson Electric Co.  
is a fine man, he would like to  
aid you in any way he could.  
I have been very anxious to see your  
great <sup>inventions</sup> put into use all over this  
Country, and especially in this  
town of Lancaster N.H. Lancaster  
is called the Switzerland of America by  
the tourist who come here from all  
parts of the world. You do not  
remember me, but I do you when  
you was a Rail Road Man and



I was an American Express  
Man, in Chicago. Would you  
please tell me what I ought to  
pay for an electric Carriage with  
one of your long distance Batteries  
that would carry two or four  
people. I do not want expensive  
finish, but strength & power. I  
am getting along in years and am  
lame, hard work to walk. I await  
a reply -

Yours Truly  
Edmond S. Freeman,  
P.O. Box 236, Lancaster, N.H.

March 29 1911.



AT FRANKFURT, AUSTRIA, 1888.  
 HONORABLE MENTION AWARDED  
 AT THE UNIVERSAL EXHIBITION  
 OF 1889.  
 AWARDED GOLD MEDAL BY THE  
 COMMISSIONERS OF THE  
 CANTON OF BASEL, 1890.



ONLY PLACE OF BUSINESS  
 BROADWAY, 51ST STREET & 7TH AVENUE,

NEW YORK, March 22, 1911.

MAR 23 1911

CARRIAGES, AUTOMOBILES AND OTHER PROPERTY WITH US FOR REPAIRS.  
 STORAGE AND OTHER PURPOSES IS HELD STRICTLY RESPONSIBLE WITH THE EXCLUSIVE  
 RESPONSIBILITY FOR LOSS OR DAMAGE THEREBY FROM FIRE OR OTHER CAUSES.  
 INSURANCE AGAINST LOSS BY FIRE EFFECTED BY US OR OTHERS IN WRITING.

CABLE ADDRESS: "KOEKUY"

AUTOMOBILE WORK,  
 CARBIDE OR ELECTRIC  
 OF ANY DESIGN FOR  
 BODIES OF ALUMINUM OR WOOD.

Edison Storage Battery Company,  
 Orange, New Jersey.

Gentlemen:

Replying to your inquiry of yesterday, beg to inform you that price  
 of our electric brougham, full size, accommodating two persons is \$4,000, additional  
 for Edison's improved storage battery, consisting of 60 cells, type A-6, \$1,200,  
 or in other words \$50 per cell net. Medium size brougham, same accommodations  
 as above \$3,900; cost of battery according to number of cells and type.

Concerning equipment, these vehicles are fully equipped for city use,  
 pneumatic tires, lamps, signal horn, ammeter, etc.

Painting, lining, etc. to one's fancy.

Trusting this information will serve your purpose and assist you  
 in placing your order at early date, we are,

Faithfully,

*Kearney & Co.*

*M. Meadowcroft*

Mar 4/11 BS-TAE

Say I never intended building an  
Electric Vehicle, only a battery for  
driving an Electric. These batteries are  
now being furnished Dixon, Calif.,

Mar 4 1911  
Edison Laboratory: Dixon

Dear Sirs:

I am going to write this  
inquiring letter, whether  
I receive a reply or not, but  
I will wait for one at any rate.

We have a friend that told  
us about reading of Edison's  
workings on an Auto or Truck  
it was to burn. This friend  
is well to do but he will not  
put his money in a gasoline  
or Electric Car always says  
he is waiting for Edison's  
& that is what I am going  
to do, although I desire a

Machine so much but de-  
cide to wait if this is true  
about Edison's. If so will  
he deliver any this year,  
there are so many I  
have told & they all will  
want one I know.

We have one of Edison  
Phonographs, how can equal  
it, now all we lack is  
an Auto.

Yours Truly,  
Mrs. Robt. Collier.

Dixon,  
Calif.

Box # 95

Electric Vehicle info  
in large quantities

The Anderson Carriage  
Co of Detroit Mich

Make several very  
fine Electric vehicles using

the Edison battery

Send Battery  
Catalogue

4

BS -  
at 5  
Marsh

*Now*  
March 25, 1911.

Mr. Edison:-

I have been devoting a good deal of my time to getting matters started in Boston.

The preliminary results have been certainly "electric".  
The only thing that we have to guard against is too much enthusiasm at first. *After all its a long fight.*

Four manufacturers have established Boston connections which includes the Lansden, the Walker, the Rauch & Lang and one other, whose name I do not recall at the minute. All these agents have bought demonstrating rigs. Three others have asked the company to hunt up good agents for them, so we are reasonably sure that things are going to hum.

We are doing a good deal of publicity work in the daily papers as well as the trade papers and are trying to induce the manufacturers, representatives and dealers to do their share of the advertising.

It looks like Boston will eventually turn out a big winner.

We have a whole program mapped out ahead to keep the interest of the public and the manufacturers at high pitch.

The next thing on the program is a meeting and a dinner to the local dealers and representatives next week. We will at this dinner try to carry out your idea of showing absolute necessity of long demonstrations of both Pleasure Vehicles and Business Rigs. *(I have met with some opposition on this)*

Also we will put in an earnest plea for "team work" among all the dealers and representatives; that they drop "knocking" each

other and all sail into hammering the gasoline car and "incidentally"  
*and* earnestly to sell Electric Automobiles for business and  
pleasure.

We will also at this meeting try to draw out all the Vehicle  
people and get them to make suggestions. We will announce at the  
meeting that the Company proposes to give free electric signs to  
every Electric Vehicle dealer in Boston.

Another thing, the gas truck people have sold a great many  
more cars than the Electric people, because every time a prospective  
buyer came up, there have been eight or ten gas truck fellows  
climbing over each other. If the machinery of one fellow did  
not quite hit the merchant or manufacturer solicited, the persuasion  
of the special features of some other truck did. Moreover, the  
effect upon a possible customer of being solicited by a crowd in-  
stead of one or two men only bears the ear-marks of success  
instinctively to his mind.

*oak me.* We are going to play that on the Boston people, *see if it will*

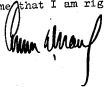
I believe that if I could go out to Chicago and get them  
stirred up, like I have Boston, the fever will spread over  
all the Central Stations of the country, and I believe that it  
would be a good investment for you to pay me the small amount  
involved to send me out to Chicago to stay four or five days and  
get their organization ~~as~~ to do just what Boston is doing.

Why, Mr. Edison, if the Central Stations of this country once  
got worked up, their own demand will keep all the manufacturers of

Electric Vehicles in this country running night and day, and you couldn't possibly build enough batteries in the next two years to supply this demand alone.

Boston will spend over \$200,000 on it's own equipment before it finishes this year's work, because they have to have about 100 Electric Vehicles of all kinds. Multiply this by the other big Stations ~~and you have got an enormous total.~~ *all the 5500 small ones*

I hope you will agree with me that I am right on this.



GENERAL ELECTRIC COMPANY

PRINCIPAL OFFICE  
SCHENECTADY, N. Y.

*MS 4/12/11*

In Reply Refer to

BOSTON OFFICE, 84 STATE STREET

APR 11 1911

*Very letter of 4/7 at hand  
I will send Mr. Davis  
Catalogues of  
at once*

Dear Mr. Edison:-

When I last talked with you you stated that you would answer my letters personally and not through our Secretary, so I am trying it again in case that this will reach you.

*Several info  
truly.*

*at once  
will sign*



[ATTACHMENT/ENCLOSURE]

GENERAL ELECTRIC COMPANY

PRINCIPAL OFFICE  
SCHENECTADY, N. Y.

In Reply Refer to

BOSTON OFFICE, 84 STATE STREET

April 7, 1911.

Mr. Thomas A. Edison,  
Llewellyn Park, N. J.

My dear Mr. Edison:-

I am just in receipt of the following letter, dated April 6th, from one of my oldest customers and evidently one of your oldest admirers, W. K. Dana, Treasurer of the Dana Warp Mills, Westbrook, Maine.

"I am sorry to have troubled you this morning but I want an electric or gasoline truck to do our teaming. I prefer an electric one to the gasoline ones. I want to get as near headquarters as I can on the Edison battery as I have always believed in Edison from the time he tried to light Manlow Park and my faith has grown stronger in him all the time.

My teamsters have gone from horses to oxen and I get out of patience with them sometimes. This morning is one of those occasions.

Anything you can do or any information you give me will be thankfully received."

I am sending you this letter as I know that you will be interested in same, and it also recalls to my mind the many pleasant remembrances I have of the connection which I had with you many years ago. I enclose a couple of blank cards. May I ask that you send me your autograph so that I may send one of them to your old friend down in Maine? He is a man of seventy years and to look at him you would think he had no intelligence at all, but he is a typical "Down East Yankee" and I know you would be pleased to meet him.

Yours very truly,



Battery - Exide

*Ans 5/1/11*  
A. I. CLYMER  
VAN WERT, OHIO

Edison Storage Battery Co., *You are right, about the Exide*  
Orange, N. J. *owning stock in Elec Vehicle*  
Mr. H. F. Miller, Secty., *Concern, there are 2 I know of,*  
*one the Woods of Chicago they*  
Dear sir: *own a large stock we had*

The attacht extract *from the* Chicago Record-Herald. It occurred to me that your advg. dept. might be able to make use of this *statement* *disparagingly* Exide Co., which constitutes an arguement in favor of the Edison as against the Exide. I believe it would interest Mr. Edison *behind our orders* if he heen't already seen it. *best possible assembled*

In looking thru *the* 1911 edition of Henry Clews & Co.'s "Investment Guide," a small compendium of investment information, I notice that the Electric Storage Battery Co. is stated as "owning stock of several companies manufacturing automobiles." This doubtless accounts, partly, for the fact that some of them mention the Edison last--altho, very likely, they think it is not to their interest to recommend the Edison specially as being essential to the highest efficiency, their prices for the bare car being prohibitively high for most auto users. I presume your reply to my recent letter, with lit., is on way.

*Yours truly*  
*A. I. Clymer*



A. I. CLYMER  
VAN WERT, OHIO

April 29, 1911

Edison Storage Battery Company,

Orange, N. J.

Mr. H. F. Miller, Secretary-Treasurer,

Dear sir: Your favor of 27th inst. is at hand and I am delighted to read that you are unable to keep up with your orders, notwithstanding the fact that capacity is being continually increased.

I think you overlooked my request for four sets of literature on batteries for automobiles, including four of your latest illustrated catalogs. Hoping to receive same by return mail, for immediate use, I am

Yours very truly,

*A. I. Clymer*

*Your request  
for Catalogues  
was turned over to  
Mr. Bee who tells  
me she took care of it.*

D5- Can (7)

POST CARD

This space may be used for  
Correspondence

This space is for the  
Address only



arrived here  
at Morristown  
12:15 PM more  
"juice" left in way  
Charles

Thomas A. Edison

Orange  
N.Y.  
MAY 10 1877

Box - TABLE  
Cable Address  
DUROIS  
NEW YORK

Telephone  
JOHN 4367

Robert Sedgwick  
Insurance.

Office of Frank E. DuBois  
27 William Street.

Ans 5/20/11

New York. May 23rd, 1911.

Thomas A. Edison Esq.,

Valley Road,

West Orange, N.J.

My dear Mr. Edison:

I hope you will remember me as a neighbor of yours in  
Llewellyn Park when I was living there some fourteen or fifteen years  
ago.

A lady customer of ours wishes me to inquire of you what  
automobile building firms handle your electric engine and put it in  
their cars. This lady is Mrs. Clarence Cary, and she is somewhat of an  
invalid. She has ridden in a number of electrical machines, and tells  
me that your engine obviates the jolt and jar and is the smoothest  
running engine she has ever seen. She wishes to build an automobile  
after her own ideas with your engine in it, and I shall be very much  
obliged if you will tell me what concerns use it.

Hoping that you are quite well, I am,

Yours very truly,

Robert Sedgwick.

I only manufacture electric  
storage batteries to run  
Electric Cars - I think she  
wants an electric car which makes  
no noise runs perfectly smooth +

009

There are a number of makers  
of Electrics, The most expensive  
best is built by Healy & Co. My  
used by J.P. Morgan & people of that  
type, The other builders of cars  
Expensive cars are the Detroit  
Electric, The Baker Electric  
Both have offices in N.York  
& build ~~some~~ cars for the Edison  
Battery - If she sends around  
to them asking to see an Electric  
with Edison Battery I am sure  
they would bring them to her  
house & give a demonstration

Yours  
J. C. Z.

The batteries and motor are in splendid condition.

Bailey - Gato

NATIONAL ELECTRIC LIGHT ASSOCIATION

MEMBERSHIP COMMITTEE

- W FREEMAN PRESIDENT
- ROBERTS N Y
- JOHN F GILCHRIST VICE-PRESIDENT
- CHICAGO ILL
- FRANK M TAYLOR VICE-PRESIDENT
- DAYTON OHIO
- T COMMERFORD MARVIN SECRETARY
- CHICAGO ILL
- H BILLINGS ASST SECRETARY AND TREASURER
- MEMPHIS TENN
- CHARLES H HODKINSON MANAGER OF TRANSPORTATION



30 WEST THIRTY-SIXTH STREET  
NEW YORK  
TELEPHONE NUMBER  
4000 HUNYAT

- W W FREEMAN
- FRANK W FREEDRUFF
- JOHN D GILCHRIST
- FRANK M TAYLOR
- OSCAR E BROWN
- H M BRADLEY
- A TAYLOR WILLIAMS
- H M HULLBERT
- DUDLEY FARLAND
- C A BROWN
- ALICE TAYLOR
- W C L BELL
- BERNARD A WAGNER
- J C ANNA PRESIDENT NEBRASKA SECTION
- JOHN H HILGERS PRESIDENT GEORGIA SECTION
- A H CRAMER PRESIDENT PENNSYLVANIA SECTION
- H W CHANDLER PRESIDENT ALABAMA SECTION
- H D HONG PRESIDENT NEW HAMPSHIRE SECTION
- H T HARRIS PRESIDENT NEW YORK SECTION

June 5, 11

JUN 4 - 11  
Dear Mr Edison :-

I have sent you under separate cover, in a formal paid quway, a full report on my Bailey machine, because I thought you would like to have it in that way. I want to say to you personally, however, that I have got lots of fun and pleasure out of the machine and am deeply appreciative of your great generosity in giving it to me.

Ever yours truly,  
T. Weather



*Cuto - Bailey*

NATIONAL ELECTRIC LIGHT ASSOCIATION

EXECUTIVE COMMITTEE

W W FRESHMAN President  
 BROOKLYN N Y  
 JOHN F GILCHRIST First Vice-President  
 CHICAGO ILL  
 FRANK M VALE Second Vice-President  
 DAYTON OHIO  
 T COMMERFORD MARTIN Secretary  
 GEORGE W HARRISON Treasurer  
 H BILLINGS Army Secretary and Treasurer  
 HUBBERT W BURDETTE General Counsel  
 CHARLES H BODENBENDER Master of Transportation



20 West Twenty-Ninth Street  
 New York  
 Telephone Number  
 4350 TRAVEL

W W FRESHMAN  
 FRANK W FRESHMAN  
 JOHN F GILCHRIST  
 FRANK M VALE  
 CHARLES L EDWARDS  
 H M EDWARDS  
 ARTHUR WILLIAMS  
 H C ADAMS President Nebraska Section  
 JUDY H HILGREN President Georgia Section  
 A H BULLOCK President Connecticut Section  
 H W GREENLAND President Massachusetts Section  
 H H HUGHES President New Hampshire Section  
 H T HARRIS President New England Section  
 H M HULLBERT  
 DONALD TARRAN  
 G A STEIN  
 ALAN DOW  
 W G L BULLY  
 HERBERT A WAGNER

*Acknowledged, June 7, 1911  
 to Mr. [unclear]*

NEW YORK, June 5, 1911.

JUN 6- 1911

T. A. Edison, Esq.,  
 Edison Laboratory  
 Orange, N. J.

Dear Mr. Edison:-

I thought you might like to receive, as I promised you, a full report of the operation of the Railway phaeton. I intended at first to keep you advised from time to time as different troubles developed as noted by my son Kingsley, but we soon made up our minds that this would be an endless job and would give you the matter <sup>full</sup> in detail. I am now sending you in his handwriting a statement which he made up for me yesterday and which gives, I think, without further comment, the actual status of the case. I agree with Kingsley that the machine is not a commercial proposition along its present lines, although both the battery and the motor are in splendid condition. If you would like to have my son come out and see you to go over the points of criticism, I should be very glad to have him do so after this week. Just now we are busy cleaning up after the great convention, which closed with a total attendance of 8200. We were all delighted to have you come in and you can judge for yourself from the reception you got how pleased everybody was to have the opportunity to pay their respects and homage. My force here is so busy cleaning up after the convention that I cannot take them off



to copy this document but it will not take you long to run through it.

Believe me with regards, ever,

Faithfully yours,

*J. C. Quarter*

Secretary.

*of course the machine is  
laid up and out of commission.*

June 6/13

A. I. CLYMER  
VAN WERT, OHIO

*The Reporters got things mixed*  
June 5, 1911

Edison Storage Battery Co., We are developing a type of battery with  
Orange, N. J. smaller tubes for use in auto batteries  
Mr. H. F. Miller, Secy.-Treas. Wagon which requires 16 small  
cells & can be charged at high  
Dear sir: rate in 10 minutes sufficient

I have just read in the New York Times and other papers, of Mr. Edison's announcement that he has further perfected the Edison battery until it may now be charged in three to five minutes for a fifty to sixty mile run, and that the battery for a delivery wagon could be held in a suit-case

Will you be kind enough to advise me whether this is correct, and how soon you can fill orders? Owing to illness in the family, I deferred buying a pleasure car this spring, but if the new battery will soon be ready for delivery, I shall be very glad to see it once.

It occurs to me that the greatly decreased weight will justify a much lighter car and perhaps a different plan as to battery-space. If you will kindly give me available information in this connection, and advise the price and number of cells suitable for a pleasure carriage, I shall be obliged.

broughton,

*Edison*

A. I. CLYMER  
VAN WERT, OHIO

Does Mr. Edison recommend that carriage be equipped with several groups of cells, with the intention that first one and then another group be attached, until all are exhausted? Or, could all be attached in one-circuit? I will ask, also, whether 150 to 200 miles could be covered as before?

Awaiting your courteous reply, with as full information as you are now able to give to my inquiries herein, I remain

Very truly yours,

P.O.Box 351

P.S.: Will you please mail your earliest literature as soon as ready.

65-742

TELEPHONE CONNECTION.  
CABLE ADDRESS: JURGENS, BROOKLYN-NEW YORK.

CODES POSTAL  
WESTERN UNION.

REFERENCES ALL MERCANTILE AGENCIES,  
MANUFACTURERS NAT. BANK,  
BROOKLYN-NEW YORK.



Brooklyn New York

June 5th, 1911.

Mr. Thomas A. Edison,  
Orange, New Jersey.

Dear Sir:--

I have just closed a contract for one of your large batteries for my Electric Vehicle and I notice by yesterday morning papers that you have made considerable improvements. May I ask when this new battery will be ready for delivery?

I enclose a stamped envelope for reply.

Yours very truly,

W. B. A. Jurgens.

JMS.  
Dict by

*[Handwritten signature]*

*The improvements are not in the battery but in the method of working them as I have just closed a contract for one of your large batteries for my Electric Vehicle and I notice by yesterday morning papers that you have made considerable improvements. May I ask when this new battery will be ready for delivery? You will find the battery you have will be perfectly satisfactory to you.*

JUN 6- 1911

DS-126

112 Hudson St  
West Newton Mass June 6, 11

Ans 6/10

Mr Edison

Just  
6/11/11

Report not correct as here

info selling a battery

Dear Sir:

which can be changed rapidly  
so that at least 8 cars are changed  
Having recently seen the statement

in 5 minutes with current  
said to have been made by you at a meeting in  
N.Y. of the National C. Service. I do not know that you  
had produced a new battery which could be  
put into an ordinary car, capable of  
propelling an auto. fifty or sixty miles, and  
that could be changed in a few minutes.

I take the liberty to write you asking if  
this report is true, and if so, whether the  
new battery could be readily adapted to one  
of the old electric vehicles without great  
expense. Could you at present give  
any idea of the probable cost of such a  
battery, when put on the market?

Very truly yours  
Henry C. Little

*Auto - Bailey*

ALL AGREEMENTS ARE CONTINGENT UPON STRIKES, ACCIDENTS, DELAYS OF CARRIERS, AND OTHER CAUSES BEYOND OUR CONTROL.

CABLE ADDRESS: "DIEHL-ELIZABETH" CODES USED: LIEBER'S, A.B.C. EDITION, A.L. AND PRIVATE.

BURNETT C. KENYON, President.  
PHILIP DIEHL, Vice President.  
HERBERT S. MILLER, Secretary.  
JOHN A. REID, Treasurer.

# Diehl Manufacturing Company

MANUFACTURERS OF

## ELECTRICAL APPARATUS

MAIN OFFICE AND FACTORY  
ELIZABETHPORT, NEW JERSEY

SHOW ROOMS:  
NEW YORK, 90 Prince St.  
BOSTON, 128-132 Essex Street.  
PHILADELPHIA, 1305 Race St.  
CHICAGO, 227-231 Jackson Boulevard.



Elizabethport, N. J. *June 12, 1911*

*Confidential*

*Ans 6/16/11*

Mr. Thomas Edison,  
Orange, N. J.

Dear Sir:-

Subject:- CREDIT STANDING OF S. R. BAILEY & Co.

We have been referred to you as to the financial standing of S. R. Bailey & Company. Any information you can give us will be very much appreciated and we assure you will be treated with the strictest confidence.

Yours very truly,

DIEHL MANUFACTURING COMPANY.

*D. S. Bannister*  
Asst. Treasurer.

WEC/EP

*Anti-Gate*

THE EDISON ELECTRIC ILLUMINATING CO.  
OF BOSTON.  
General Office, 39 Boylston Street.

*Acknowledged Receipt  
of money  
good idea  
J. H. Llewellyn  
JUN 29 1911  
Analyst*

Thomas A. Edison, Esq.,  
Llewellyn Park, N. J.

My dear Sir:

It gives me pleasure to comply with the suggestion of Mr. William H. Atkins, General Superintendent of The Edison Electric Illuminating Company of Boston, and forward to you a couple of the pennants we have recently had made for use in connection with our electric vehicle campaign.

We are giving these to the users of electric vehicles of all kinds, and they are generally proud to fasten them on their cars for the advancement of the cause.

Yours very truly,

*J. H. Llewellyn*  
Superintendent of Advertising.

LDG/JFG

*S. Storage - Gen*

July 15, 1911.

Mr. Miller:

Regarding the attached letter. I took same up with Mr. Edison Friday night, and he said we could write and tell them that Mr. Edison would be glad to sell them all the batteries they could use, but he intended to build motors for his production only and that they would not be on sale for the present, at least. They will be used entirely by the Lansden Company and Mr. Edison's new delivery wagon.

*Badman*



[ATTACHMENT/ENCLOSURE]

TELEPHONE FORT HILL 3388.

SAMUEL WALLACE, JR., MANAGER.

The Electric Wagon Company

Sole Agents for

The Lansden Company, of Newark, N. J.

35 Federal Street, Boston  
Room 521

LANSDEN  
ELECTRIC  
WAGONS.

EDISON  
BATTERY  
EQUIPMENT.

July 7, 1911.

Mr. Thomas A. Edison,  
West Orange, N. J.

JUL 19 - 1911  
Am 7/11

Dear Sir:-

Perhaps you will recall the writer's visit to you with Mr. Ira Miller of Westfield, Mass. something over a year ago. Mr. Miller at that time was one of the directors of the Couple-Gear Freight-Wheel Company.

As you are no doubt aware, under the title of "The Electric Wagon Company" we have since last March been acting as agents for The Lansden Company. Prior to that, for something over a year, the writer did what he could to affect sales on the Lansden product without an agency contract. As the books show, we have been meeting with rather indifferent success in marketing the Lansden product and after careful consideration have come to the conclusion that this is mainly due to the fact that the product is listed so high. This, to our minds, also applies to the product of competing manufacturers.

We find that the purchasing public seems to be ready to buy electric wagons. We are having the active co-operation of the central stations. It would seem that under these conditions the business should come now with a rush, but it does not. The manufacturers and their agents are unable to show in the majority of cases that the prices asked are justified.

We have now decided here to assemble some light delivery wagons along the generally accepted lines, and also to do the same with industrials. We can buy the needed parts and put them together to be sold at a price far under anything now offered, with a reasonable profit to ourselves. We do not include in our plan large expense for such things as over-head advertising and salesmen.

Mr. Kelly of the Storage Battery Co. is in town and had a long talk with our Mr. Wallace last night. Mr. Kelly advised us to communicate with you personally immediately. He stated that the Edison Storage Battery Company would be glad to sell us batteries at the regular discount. He also gave us some very interesting information about your newly designed low voltage motor which enables a vehicle to climb steep hills without much dropping of voltage.

If you feel that it would be advisable, and will give us an appointment at your convenience, we will be glad to come over to see you about all this, and to get your advice, any time next week.

Yours very truly  
THE ELECTRIC WAGON COMPANY

Per 

WEE/CFB.

Battery TAE

Ans.

Orange

Ferguson

Oct 12 1911

See enclosed telg. - I started  
a garage in Chicago with understanding  
we would get a good rate, what can  
you do for us

Edison

*Auto*  
TELEPHONE FORT HILL 3388.

SAMUEL WALLACE, JR., MANAGER.

## The Electric Wagon Company

Sole Agents for

**The Kausden Company, of Newark, N. J.**

35 Federal Street, Boston

Room 521

KAUSDEN  
ELECTRIC  
WAGONS.

EDISON  
BATTERY  
EQUIPMENT.

Oct. 19th, 1911

Mr. Thomas A. Edison,  
W. Orange, N. J.

Dear Sir:-

My letter to you dated  
Oct. 11th, is enclosed to the country  
of reply.

Truly yours,

W. A. Wallace

*Boatley T. G. Handwriting*

**COMMONWEALTH EDISON COMPANY,**

EDISON BUILDING, NEW NO. 120 W. ADAMS STREET  
120 W. ADAMS STREET  
CHICAGO, ILL.

ADDRESS ALL CORRESPONDENCE TO THE COMPANY

*Harry*

*My Dear Ferguson,*  
*Regarding rates at Edison Garage in Chicago*  
*of Kansas expect your answer would be*  
*different, the better was written*  
*at the Detroit Electric*  
*write me if you are compelled to*  
*understand*

Mr. Thomas A. Edison,  
o/o Edison Laboratories,  
East Orange, New Jersey

My dear Mr. Edison;

Since receiving your letter of the 12th, together with telegram from F. E. Price to W. C. Anderson regarding the charge for service at the Edison Garage in Chicago, I have had one of our engineers looking carefully into the method of operation and have had him discuss the matter with Mr. Price. I find that the Edison Garage is being billed on our regular power rates for automobile charging, the same as other public garages in Chicago are paying. The trouble with the Edison Garage is, the consumption at the present is very small, running only 3,500 KWH. per month. The quantity at the secondary price being ~~all~~ the rate earned is not low enough to come below our maximum price of five cents per KWH. If the Edison Garage were doing sufficient business and doing their charging over long periods instead of short periods, the rate would go ~~down~~ *to 2 1/2 cents*, as the power rates are based in such a way as to enable the consumer who uses the service the longest hours per day to obtain the lowest rate. Our engineer whom I have had look into this matter with Mr. ~~Price~~ *Anderson* advised me that if the charging is ~~done~~ *done* as suggested, the rate would probably run about four cents per kilowatt-hour.

*W. C. Anderson*  
*2 1/2 cents*  
*done*  
*Anderson*

*Everyone*

Mr. Edison

-2-

I am sending you enclosed a copy of our power schedule for this class of service so that you will see at once that if the operation were good, the rate would be low.

You probably are not aware that our rates here in Chicago are regulated by the City Council, and that we are obliged to publish rate schedules for different classes of service and are not allowed to vary from these schedules without giving the modified rate to all consumers. Before writing you I have explained the whole situation to Mr. Insull, and he has told me that under the circumstances he could see nothing that we could do in connection with the matter of the rate for electricity.

I am extremely sorry that I am unable to do anything for you in connection with this matter, and trust that you will understand our position.

Yours very truly,

  
Second Vice President.

L.A.F. HW



FRANK E. PRICE, MANAGER  
TELEPHONE CALHUN 1773.



MAIN FACTORY AT DETROIT, MICH.  
CAPITAL \$ 1,000,000.

DIRECT FACTORY BRANCH  
2415 MICHIGAN AVE.

Chicago, Ill. 10/23/11

Mr. W. C. Anderson,  
Anderson Electric Car Co.,  
Detroit, Mich.

Dear W. C. -

I have this morning finally succeeded in having a conference with Mr. Ferguson of the Commonwealth Edison Company. To make a long story short, I was told very politely that there would be no chance of getting a lower rate at the Edison Battery Garage and that the Chicago Commonwealth Edison Company as a company could not recognize Mr. Thos. Edison so far as rates were concerned.

Mr. Ferguson has written Mr. Edison to that effect. Mr. Ferguson brought up the matter of the charging outfit which had been placed in the Edison Storage Garage stating in a very gentlemanly manner his opinion that in a way we had repudiated the bill for this work. He stated that at one time in talking with Mr. Edison, Mr. Edison had stated that he was starting a garage in Chicago and that some charging apparatus would be needed and said to Mr. Ferguson "Do what you can for the boys." Mr. Ferguson claimed that because of this remark, he had billed the charging outfit at a very low figure.

I am having an expert go over the probable cost of installing the outfit at the garage and am quite certain that I will be able to state on good authority that the charging apparatus which was put in by the Commonwealth Edison Company did not amount to anywhere near \$1000.00, however, I would not make a definite statement on this until I absolutely know. Mr. Ferguson asked me if Mr. Frayer at the time he signed the contract for this apparatus was an officer of the Edison Storage Battery Garage. I told him I was not sure as to whether or not he was an officer at that time but was somewhat of the opinion that he was. I did not commit myself on this point.

Mr. Ferguson seemed quite annoyed at there being any discussion as to our payment of this charging apparatus and I was quite insistent that the order was given without any knowledge on my part as a representative of the Anderson Electric Car Company neither was the action authorized by anyone in our company. Mr. Ferguson seemed to think that Mr. Edison had over-stepped his bounds when he gave you to understand that he could do anything particular toward securing any concessions from them.

I give you this information as a result of my conference this morning with Mr. Ferguson.

Mr. Ferguson states regarding the power price that their prices are governed by law and that under this law they cannot give special rates to any particular consumer, no matter who he may be and as evidence of this fact he handed me the booklet which I am mailing separately calling my special attention to marked paragraph on page 21.

Mr. Ferguson showed me a letter which he had written and was about to send to Mr. Edison regarding this matter, the gist of which was to the effect that there would be no discount allowed the Edison Storage Battery Garage for power.

Yours respectfully,

ANDERSON ELECTRIC CAR CO.

RECYCLED BUY NOT READ

Per

*J. E. Price*

CHICAGO, ILL.

MEMORANDUM FOR MR. EDISON.

October 31, 1911.

I have the name and address of 65,000 owners of Klaxon horns. Some of these are of course jobbers and dealers, but quite a number of them are individual owners. I think it would be a good plan if I make some sort of an arrangement with the Edison Storage Battery Company, whereby I would get ignition sets at 20% off, and conduct an aggressive campaign with the Klaxon owners, offering to send them a B-2 or B-2 Ignition Set, transportation paid, for one month's trial, with the understanding that if, at the end of one month, the battery does not come up to its guarantee, that they can return it and get their money back, less the transportation charges. I am naturally familiar with this line of the trade, and, such a letter coming from me, as the inventor of the Klaxon, will carry some weight with the owners.

If you are willing for me to do this, I will probably take this man Dryden onto my pay roll, or make some sort of an arrangement with him to whack up on the profits, and let him attend to the detail. I think I will be able to dispose of quite a large number of batteries on this plan. I might also put a few ads in the Trade Journals addressed to the owners of Klaxons, which would reach them very quickly.

I am anxious to see some quick results on this battery sales proposition, and think I can build up a nice business on this Klaxon battery.

M. R. HUTCHISON.



Bak-Gym (?)

## COMMONWEALTH EDISON COMPANY,

EDISON BUILDING, NEW NO. 120 W. ADAMS STREET  
OLD NO. 120 ADAMS STREET

CHICAGO, ILL.

ADDRESS ALL COMMUNICATIONS TO THE COMPANY

*file*  
*Mr. Price*  
*Be - note & return to me*  
*G-11*

November 8th, 1911.

Mr. Thomas A. Edison,  
 Orange, New Jersey.

My dear Mr. Edison;

I was very much disappointed to read Mr. Price's letter to Mr. Anderson under date of October 23rd, which you were kind enough to send me, and which I am returning herewith, as it does not fairly describe my interview with him.

I tried, as far as I was able, to be courteous and fair, and am very much surprised that Mr. Price should quote me as thinking "that Mr. Edison had over-stepped his bounds when he gave you (Mr. Anderson) to understand that he could do anything particular toward securing any concessions from them". I am quite positive that I made no such statement, but as I remember it, this statement was made by Mr. Price himself after I had explained to him that, owing to the fact that our prices were governed by the Municipality, it was impossible for us to make any concession for them, however much we would like to do so.

I am quite sure I told him it would give me great pleasure to do anything for Mr. Edison, personally, that was in my power, and I was extremely sorry that in this case I was unable to do anything toward modifying the rates.

As I wrote in my letter to you, I talked with Mr. Insull before writing you, so that there would be no

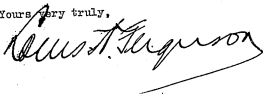
Mr. Edison -2-

stone left unturned in my endeavor to do whatever I could for you to help you in this particular situation.

I trust that your knowledge of me and my method of doing business is sufficient to assure you that as far as I am personally concerned you will have a "square deal" in Chicago.

With kindest personal regards, I am,

Yours very truly,

A handwritten signature in cursive script, appearing to read "Gustavus F. Swift", with a long horizontal flourish underneath.

L. A. F. HW

*Edison (2)*  
**COMMONWEALTH EDISON COMPANY.**

EDISON BUILDING, NEW NO. 120 W. ADAMS STREET  
 OLD NO. 129 ADAMS STREET  
 CHICAGO, ILL.

ADDRESS ALL COMMUNICATIONS TO THE COMPANY

November 6th, 1911.

Mr. Thomas A. Edison,  
 Orange, New Jersey.

My dear Mr. Edison,

I am this morning in receipt of letter from Mr. Bee under date of November 6th, to which is attached Mr. Klingel-smith's letter to Mr. Bee with your notation on it to me.

I am very glad that you brought this matter to my attention personally, as I shall take great pleasure on your account to go into it carefully, and will make it my personal business to see that Mr. Stanley Field is properly acquainted with the facts. You have probably drawn the conclusion from what Mr. Klingel-smith wrote Mr. Bee that I have been advising Mr. Stanley Field on the detail of these matters. While it is a fact that I am personally responsible for the purchase by Marshall Field & Company of Edison batteries for their trucks, I have not gone farther than this, and have not followed the operation of the batteries since they have been installed, and was not aware until I read Mr. Klingel-smith's letter to Mr. Bee that the conditions were so bad.

Mr. Klingel-smith was in my office yesterday and talked with me about the matter, but as I was getting ready for a meeting of representatives of the public utilities in Chicago, in a few minutes, I was unable to give him the necessary time, and asked him to talk with Mr. Lunn.

I wish to assure you that the Edison Storage battery

*File Bee*  
*Mr. Bee*  
*Return memo to me*

Mr. Edison. -2-

will have my personal support as far as I am able to give it,  
consistently, and it will be a great pleasure to me to do any-  
thing I can to help you in this territory.

Yours very truly,

  
Second Vice President.

L.A.F. HW

*Ben Od*  
THIS LETTER SENT TO ALL THE ELECTRIC VEHICLE PEOPLE.

## THE BATES ADVERTISING COMPANY

OFFICE OF  
**CONVERSE D. MARSH**  
CHAIRMAN EXECUTIVE COMMITTEE  
15 SPRUCE ST. NEW YORK  
ENTRANCE TO OFFICE FLOORS 3<sup>RD</sup> STORY

Telephone Numbers  
4420  
4421 Deelman  
4422

NOV 13 1911

November 11, 1911.

Thos. A. Edison, Esq.,

Orange, N. J.

My dear Mr. Edison:

The policy of the Boston Edison Company is broad and liberal. In its desire to help accentuate to the Trade Press the rapidly growing scope of the Electric Automobile, they gave the "Commercial Vehicle" these four pages of advertising.

The trouble with the Automobile Trade Press is that they don't get enough support from the Electric Vehicle Industry.

You observe that the Boston Edison Company is going very far afield in its earnest desire to benefit the Trade in general, as well as itself in particular.

The Boston Edison Company will help any concerted movement among the pleasure vehicle makers just as it has by this advertisement endeavored to secure the co-operation of the "Commercial Vehicle."

Yours very truly,



CDM-E

Encl.



## **570** **Square Miles of Electric Automobile Activity**

Within the 570 square miles of territory served by The Edison Electric Illuminating Company, of Boston, lies the greatest natural field for Electric Automobiles that exists in this country. Because of the great wealth per capita, the density of population, the splendid roads and highways, the many beautiful inter-dependent suburbs and this rich community's great enterprise and progressiveness, which has made Boston a remarkable electrical center—

Because of all these facts, this territory is particularly susceptible of cultivation by the electric automobile interests.

Taking advantage of the natural conditions, The Edison Electric Illuminating Company, of Boston began six months ago an active campaign of Publicity and Co-operation that will embrace a period of three years.

It has already succeeded in increasing the demand for Electrics in this New England Territory to such an extent that:

1. The number of manufacturers' branches and agents has more than doubled.
2. Yet so greatly has the business increased that the older established houses, without exception, report an

addition of from 100 per cent. to 200 per cent. in their sales.

This great change has been brought about in the short period of six months. It has been brought about, not alone by The Boston Edison Company's advertising, and the Company's substantial and growing purchases of Electrics in its own business, but—

The cause lies even deeper:

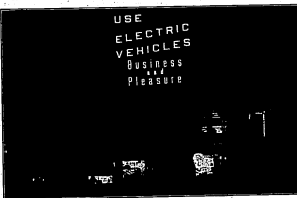
The Boston Edison Company is giving the support of its own complete service and its active co-operation to both purchasers and manufacturers of electric automobiles.

That the use of the words "Service" and "Co-operation" are not idle terms may be judged by an examination of the next succeeding pages.

PLEASE MENTION THE COMMERCIAL VEHICLE WHEN WRITING TO ADVERTISERS.



This is an illustration from one of the company's four beautiful booklets now on the press. The illustration itself was by Mr. F. W. Reed, whose drawings in *Life* made him famous. This small reproduction inadequately represents the original, which is in 12 colors, and is, perhaps, one of the finest examples of art work ever used commercially. The main thought is to show the social distinction conferred by the ownership of an Electric Pleasure Vehicle.



One of two electric signs erected—Mattapan and Chelsea. Locations were selected by the Electric Vehicle Club's Sign Committee. The installations cost the Boston Edison Company \$1,500.00. A moving electric sign now being installed cost approximately \$5,000.00, with a rental of \$1,800.00 per annum.

#### Boston Is Headquarters For Electric Auto Activity

Since the Boston campaign was started ten agencies and branches have been opened in Boston by vehicle manufacturers, including Babcock, Flanders, Hupp-Yeats, Rauch & Lang, Baker (Commercial), Waverly (Commercial), Walker (Commercial), Lansden (Commercial), General Motors (Commercial) and the Detroit (Commercial). But the six old established houses have doubled or tripled their volume of business.

Six other manufacturers are now looking for Boston representatives. The Boston Edison Company offers its services to bring dealers and makers together.

#### THE WORLD'S GREATEST ELECTRIC SHOW.

International in Scope and Character. Promoted by the Boston Edison Company. Opens October, 1912, and Runs 5 weeks. 9,756 square feet of choice space assigned Electric

PLEASE MENTION THE COMMERCIAL VEHICLE WHEN WRITING TO ADVERTISERS.

## Service for Purchasers of Electric Automobiles:

The Edison Electric Illuminating Company of Boston has always taken pride in the exceptional Service which it renders customers. Many years before public advertising heralded the word Service in connection with the Automobile Industry it was a synonym for satisfaction with customers of the Edison Company.

The same thoroughness and satisfaction will characterize its Automobile Service.

Note the Service rendered:

1. A separate department under a thoroughly competent electrical and automobile engineer furnishing free consultation and advice for prospective purchasers.
2. Mercury arc rectifier sets for public garages cost about \$75. The Boston Edison Company installs mercury arc rectifier sets complete in public garages, charging only a nominal rental.
3. The Boston Edison Company's method of charging for electric current is particularly attractive to public garages, because the steady demand over a considerable number of hours during the night earns a discount which makes the net rate generally as low as 2 to 3 cents.
4. In and about Greater Boston there are already 46 Public Charging Stations. In addition to approximately 286 Private Charging Plants. The Company is ready to increase these to any reasonable extent its patrons or manufacturers suggest.
5. The Boston Edison Company will loan charging facilities to any prospective buyer of any commercial electric automobile where demonstrative tests or experiments are desired to prove the efficiency of the Electric Vehicle.
6. The Boston Edison Company runs a \$5,000 garage, under the auspices of the Electric Vehicle Association of America, as a model plant to instruct manufacturers' representatives, operators and garage owners in the expert care, operation, service and maintenance of Electric Automobiles.
7. Through its Electric Automobile Department the Company assists in securing proper equipments and installed labor for the benefit of its patrons.
8. The Boston Edison Company maintains a Bureau of Information and Advice.
9. The Boston Edison Company loans its Assembly Room for the weekly meetings of the Electric Vehicle Club of Boston, and the Company's General Superintendent, Superintendent of Sales, Superintendent of Certification, Business Counsel, Superintendent of Transportation, Purchasing Agent, as well as the Electric and Automobile Engineer in charge of the Automobile Department, attend these weekly conferences.

November, 1912.

THE COMMERCIAL VEHICLE

C.

## Co-operation With Manufacturers

The Boston Edison Company believes that it is doing more to further the sale of electric automobiles for business or pleasure than is being done by the Manufacturers of Electric Automobiles themselves in their home cities.

Before it undertook to suggest to the Public the use of Electric Automobiles the Company thought the best plan was to itself see what it intended advocating others should see, because a careful investigation had shown the real economy and efficiency of the Electric Automobile.

Accordingly, the company began to equip its entire Transportation Department with Electric Automobiles to haul its passenger and transportation service. Over \$80,000 worth of Electric Automobiles have already been ordered. Larger new orders are being placed as fast as the changes can be made in the Transportation Department.

The following shows some of the steps taken by the Company to gain public confidence throughout the 500 square miles covered by the Company's lines:

1. The Company has started large and vigorous advertising campaigns in the following Boston daily papers: *Globe, Post, American, Travel, Transcript, Record, Herald, Journal and Christian Science Monitor.*

2. In addition to this the Company has started active advertising campaigns in 48 suburban papers, thoroughly covering its entire territory.

3. The Boston Edison Company offers agents, manufacturers and dealers special inducements at the Company's Public Garage, which is operated for the benefit of Manufacturers, Agents and Dealers. It is not the intention of the Company to have this garage as a competitor of manufacturers branches, but rather to provide garage facilities in the central portion of the city where real estate has been too expensive for manufacturers or dealers to establish a large garage that has long been needed. The assessed valuation of this property is \$2,000,000 and the location has been found extremely advantageous to all in the sale of Electric Automobiles.

4. The Boston Edison Company stands ready to meet every logical demand upon it for co-operative work which will aid in the advancement of the interests of all Manufacturers and Dealers in Electric Automobiles in Greater Boston. This offer of co-operation is very sweeping, including not only the present daily newspaper advertising, suburban weekly advertising, fixed and moving electric sign displays, etc., but anything else which will be conducive to a rapid increase in the sales of electric automobiles for business and pleasure, not only in Boston but even throughout New England. The Company's policy in this respect will be found exceedingly broad and liberal—doing more than could be expected of it and certainly more than any maker of Electric Automobiles has ever done in his home territory.

5. The extent of the Electric Sign Advertising is shown on the opposite page.

*The*  
**THE ELECTRIC VEHICLE  
ENDORSED  
by the  
EDISON COMPANY**

RECENT and considerable improvements in storage batteries have stimulated electric vehicle manufacturers to make great improvements in their construction and design.

The Edison Electric Illuminating Company has the most practical and complete electric vehicle delivery service available in any city. Its cars are built to order, complete with all the latest and best accessories and equipment.

The Edison Electric Illuminating Company is the only company in the United States that has a complete line of electric vehicles for sale and delivery.

The Edison Electric Illuminating Company is the only company in the United States that has a complete line of electric vehicles for sale and delivery.

The Edison Electric Illuminating Company is the only company in the United States that has a complete line of electric vehicles for sale and delivery.

**THE EDISON ELECTRIC ILLUMINATING COMPANY**  
BOSTON, MASS.

This Advertisement appears in the *Globe, Post, Transcript, Record, American, Traveler, Herald and Journal* on Saturday, March 4, 1912.

This is a facsimile of the original advertisement published by the Boston Edison Company endorsing the Electric Vehicle. Note the solid strength of this advertisement because the Company is itself doing what it advocates others doing—purchasing electric vehicles in large quantities. Over \$10,000 worth of Electric Automobiles have already been sold the Company by five manufacturers since this advertisement was printed. The general feeling of confidence in electric vehicles and the response in actual orders to the manufacturers was very marked after the appearance of this advertisement.

### The Central Station Back of the Electric Vehicle

The most profound impression created at the last annual Convention of the Electric Vehicle Association of America was produced by the paper read by Mr. E. S. Mansfield, Engineer and Superintendent in charge of the Automobile Department of the Boston Edison Company. (See editorial column.)

It told in detail of the great work of education undertaken by the Boston Edison Company.

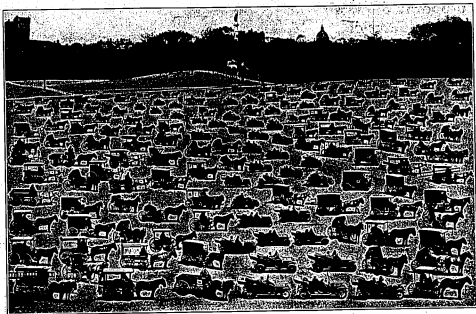
A copy of this paper, attractively bound and illustrated, will be sent on request.

THE WORLD'S GREATEST ELECTRIC SHOW

Automobile-Interests. 4,932-feet contracted for in the first 2 weeks. The great future demand for Electrics will come from Boston. Make your exhibit there. The management promises a world's record in attendance and exhibits.

PLEASE MENTION THE COMMERCIAL VEHICLE WHEN WRITING TO ADVERTISERS.





The Transportation Department Equipment of the Edison Electric Illuminating Company which is being completely changed over to Electric Vehicles because they save the Company money.

### THE ELECTRIC VEHICLE CLUB OF BOSTON

#### The Electric Vehicle Situation

This week's convention of the Electric Vehicle Association of America demonstrates anew the necessity of the sale of bringing into operation the diversified interests which must work in harmony if the Electric Vehicle is to be properly exploited.—(Extract from editorial in *Electrical World*, Oct. 14, 1911).

In order to produce the greatest co-operation and consequent strength for the entire industry in Boston, it was necessary that all manufacturers, representatives and dealers meet upon a friendly plane and unitedly "boost" the Electric Automobile.

Accordingly, the Boston Edison Company suggested a closer affiliation of all interested in the Industry. The result was the Electric Vehicle Club of Boston.

This Club meets in the Assembly Room of the Boston Edison Company sharp at 12:30 P. M. every Wednesday. An invitation to attend is given all visiting manufacturers and their representatives at all times.

Boston offers a great campaign of Publicity, Purchase and Co-operation to increase Sales and benefit customers. It offers these facilities broadly to all Purchasers and likewise to all Manufacturers of Electric Automobiles and Accessories.

## **The Edison Electric Illuminating Company of Boston**

**33-39 BOYLSTON STREET**

PLEASE MENTION THE COMMERCIAL VEHICLE WHEN WRITING TO ADVERTISERS.

At these weekly conferences a wonderful amount of friendly co-operative work has been developed, with active, aggressive standing committees formed on all the following lines:

- (1) Committee on Co-operative Advertising.
- (2) Committee on Electric Signs.
- (3) Committee on Vehicles and Electric Shows.
- (4) Committee on Rates.
- (5) Committee on Garage and Charging Stations.
- (6) Committee on Publicity.
- (7) Committee on Arbitration.
- (8) Committee on Co-operation between the Club and Boston Edison Company.
- (9) Committee on Public Meetings.
- (10) Committee on Lists of Prospects.

*Run a Current*

December 7, 1911.

Mr. Edison,-

The present method of putting up ignition cells for automobile work is not practical. Especially does this obtain when considerable amounts of current are necessary, as when blowing Klaxons.

They are now placed in trays, which, in turn, are placed in our steel boxes. Usually these boxes are placed on the running board of the machine, and therefore are subjected to the cold air blown rapidly by them. As a result, Klaxons operated by Edison Battery in Winter, do not ~~reach~~ full voltage.

It would seem much cheaper and easier for us to place these cells in a steel box, separated, and the space between filled, as I have done with my Ordnance batteries. The insulating compound we use for this purpose is an excellent retainer of heat, and therefore, after a car has been stored in a garage all night, it can be out for many hours in low temperature, before the electrolyte temperature will reach the critical point.

Furthermore, the cells can be placed closer together, and the length of the box correspondingly cut down. A hinged top can be attached to the steel box, thus not necessitating a separate containing box for the unit.

Inasmuch as Edison Battery will shortly enter largely for furnishing current for lights, etc., on machines, this feature is important, and should be corrected before injury is done to the battery's reputation for this purpose.

M. R. HUTCHISON *M.R.H.*

*Let General*

THE BATES ADVERTISING COMPANY

OFFICE OF  
CONVERSE D. MARSH  
CHAIRMAN EXECUTIVE COMMITTEE  
15 SPRUCE ST. NEW YORK  
ENTRANCE TO OFFICE FLOORS 5<sup>th</sup> STORY

Telephone Numbers  
4420  
4421 Deelman  
4422

December 13, 1911.

Thos. A. Edison, Esq.,  
Orange, N. J.

My dear Mr. Edison:-

*RE 12/13/11*

In the Year of our Lord 1903 there was not an Electric Light Company in this country doing any orderly or systematic advertising -- a desultory notice here and there was all that ever cropped out. I began a stirring campaign for The Boston Edison Company, for The Commonwealth Company of Chicago, for Henry L. Doherty, Stone & Webster and J. G. White Companies.

The success of all this work was so tremendous that literally millions of dollars have been spent since the awakening of all the other Electric Light Companies. Does this suggest any possibility to you of what is going to happen in the Electric Vehicle field as a result of my Boston work -- and the magnificent support of the Boston Company?

The head of a large Electrical Manufacturing plant told me a little while ago that he considered my work had sold more Electric apparatus than any other single man's in this country (as they say in the Postum Advertisements, name on request.) The same results will happen on advertising and sales planning for Electric Vehicles as I secured for other electrical apparatus.

Already there is an awakening among the Central Stations in a few of the more enterprising companies scattered here and there, but there will be no general awakening until the Boston experiment

of expanding the Industry by injecting a third-of-a-million dollars into the situation has been proved an enormous success. This will carry its own lesson to everyone of the 6,000 Central Stations in the United States whose combined capital is nearly 2½ billion dollars.

There is a time factor in making other people see the things you want them to see, however logical your position. I have noticed that myself with you gentlemen of the E. V. Industry. It takes time to get a new idea through the heads of the managers of Electric Light Companies just as it does anyone else.

I took the financial head of a large banking house out to Orange to see Mr. Edison the other day. In the course of an hour's talk he told how it took 6 or 7 years for the people to first wake up to the value of electric light. But people act quicker -- live quicker -- than they used to. All the active Electric Light Companies will fall in line after Boston has proved out, whether it be 3 years from now or one year from now.

It is going to take the other Central Stations considered as a mass 3 years to thoroughly wake up to the Boston situation under ordinary conditions, because an ordinary man cannot see in advance the force of an undeveloped situation -- it has to be proved out to him, it has to be demonstrated -- and then some.

Without your help I can show the Central Stations of the country an enormous demand for Electric Vehicles in the Boston Territory in the next 3 years.

But with your help I can do this very same thing in 1 year.

In the 6,000 Central Stations in this country there are to-day at least 400 splendid business organizations. You can turn everyone of these business organizations into a booming machine for.

Electric Vehicles once the management sees the light.

All of you gentlemen in the Electric Vehicle Industry together could not create those 400 selling machines in 10 years of work. Yet they are there and their energies are being directed otherwise than in the advocacy, promotion and exploitation of Electric Vehicles.

And all this is true, gentlemen, word for word and line by line, and yet I do not seem to have been able to show you where your interests lie in getting out of the rut of the deadly, daily thump, thump, thump to do a little something unusual in Boston to help yourselves.

The ragged little urchin has my sympathy who used to go before the foot lights and sing --

"Gee! but it's hard when you ain't got a friend."

Yours very truly,



CDH/EG

*Public*

E 9-302-2-11.

## Public Service Electric Company

Broad and Bank Streets,  
Newark, N. J., December 14, 1911.

*Ans 17/18/11*

~~Monday~~  
*Wednesday -  
any time today*

THOMAS A EDISON, ESQ.,  
Edison Storage Battery Company,  
Orange, New Jersey.

Dear Sir,-

I am in receipt of your letter of December 12th,  
regarding the subject of electric vehicles and I would  
be very glad to call on you any time that you might design-  
ate.

If you will kindly let me know when it will be conven-  
ient you will oblige

Yours very truly,

*R. R. Young*  
DIVISION AGENT.

24 9041

# THE BATES ADVERTISING COMPANY

OFFICE OF  
**CONVERSE D. MARSH**  
CHAIRMAN EXECUTIVE COMMITTEE  
15 SPRUCE ST. NEW YORK  
ENTRANCE TO OFFICE FLOORS 3<sup>rd</sup> STORY

Telephone Numbers  
4420  
4421 } Beekman  
4422 }

DEC 16 1911  
December 15, 1911.

My dear Mr. Edison:-

*Concerning the attached letter:*  
Don't worry any by thinking I am giving up  
trying to make the Electric Vehicle Manufacturers see my point.  
Some of them are already spending a lot of money, but I want them  
all to boost Boston sales.

*get*  
We have not started to fight yet and we are going to  
get some of our unregenerated friends in the Industry aroused  
fully before we get through. Some of them are already aroused  
and extra money for demonstrating vehicles and advertising and  
salesmen is being spent in Boston. But having by the letters I  
have sent made merely a feint I am now going to start in and out-  
flank them.

The next few letters will be sent by the Superintendent  
of the Automobile Department in Boston and then I will have  
Mr. Atkins, the General Superintendent open out on them. Finally,  
Mr. Edgar's thunder must be added to the din of battle and I  
will bet an Edison Battery against a lead outfit (Heaven knows  
that's odd enough!) that instead of waiting several years for  
them to see things in the chimpanzee way they'll get the light  
in the next few months.

Please remember I have not really started, I have just  
been taking in a breath before the pistol cracked at the sprint  
line.

*Marsh*

# THE BATES ADVERTISING COMPANY

OFFICE OF  
**CONVERSE D. MARSH**  
CHAIRMAN EXECUTIVE COMMITTEE  
15 SPRUCE ST. NEW YORK  
ENTRANCE TO OFFICE FLOORS 5<sup>TH</sup> STORY

Telephone Number  
4420 )  
4421 ) Beekman  
4422 )

December 15, 1911.

Thos. A. Edison Esq.,

Orange, N. J.

My dear Mr. Edison:-

Something tells me I'm a failure!

I have kept iterating, re-iterating and re-re-re-re-iterating a vital fact in the progress of your business.

But, I can't get it over to you.

You'll see it all right, after it's all done -- 3 years from now. If I possessed power to make you see it to-day we could cut that 3 years' period down to a single year.

If I could make you see it now, you couldn't fill your orders one year from this day.

Boston has started out to help you by spending 1/3 of a million dollars in a single year.

Neither their doing it or my telling you about their doing it has moved you a single hair's breath so far as your material aid is concerned.

That's why I am a failure!

Yet Boston's movement is going to be duplicated all over the country in 3 years.

You can get that giant movement going in a year if you would spend a fraction of what Boston is spending.

I'm no artist, but if you'll come down to my office, I'll dip a paint brush in some vermilion red ink and try to paint



a picture of a map of the United States and then put a circle around over 100 cities that I know will stand from \$5,000 to \$35,000 each in a single year after the Boston situation has been demonstrated.

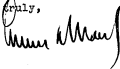
Incidentally, let me close my record of a failure achieved by saying that it wouldn't take much load off the point of your pencil to figure what such a total in 100 cities would mean. It is a good deal more money than all of you gentlemen spend together in your National advertising.

And there's 300 more small cities with splendid business-getting organizations that ought to be working day and night to help push the E. V. business.

Will you tell me as a personal matter before I close this unproductive correspondence just where I have failed to make the point? I see it, Boston sees it. Wherein -- how -- has my attempt fallen down to make you see it? Have I been too earnest -- have I been too "sassy" -- is there any possibility of a chance that the fault is yours?

At any rate -- Goodbye -- I'm a failure as far as you are concerned and there's no satisfaction in the knowledge that you are the loser. Although Boston doesn't get a dollar of co-operative help from you she will work out her own plans in 3 years' time. If you're satisfied I have to be. Goodbye.

Yours very truly,



CDH/EG

December 27, 1911.

Mr. Edison, - I have your memorandum "Find some more flaws in this guarantee". I didn't find, attached to this memorandum, any guarantee to find flaws in. I did find a masterpiece for the front cover of "Puck". It is possibly a good thing that our good friend Mark Twain has passed away. If he had not already done so, a perusal of this king of jokes would cause him to do so, from sheer envy.

1. An unsuspecting man in Key West, Fla., bought a car equipped with Ironclads. After the car was delivered, and someone tells him about this guarantee, he discovered that the particular make of car he has is not "approved."
2. When ordering an "approved" car, our Key West friend specifies some make of tire that has given him good service in machines he has owned before. When he goes after his guarantee, he finds the tires on that machine are not "approved."
3. He buys an approved car with "approved" tires, is out in the country, and gets a blow-out. He must be sure to buy another tire of the same make, or, failing to find such in local dealers' garages, he must lay his car until one of these "approved" tires comes from the factory.
4. In the beginning, the "guarantee" states that such will be given, but in the last paragraph, it states that the guarantee is not binding, unless accepted by the owner, and countersigned by an officer of the Electric Storage Battery Company, at Philadelphia, Pa. What is there to indicate that the officer of the Company will

countersign it?

5. When I was in the export grain business with my father, he sometimes had three and four carloads of grain lost for four or five months. Our Key West friend's car and battery get lost on the way from the factory. He doesn't make his application for guarantee until the car is received. Too late.

6. The customer buys his battery from one of the Exide depots. It was shipped from the factory over fifty days before. No guarantee in order.

7. "Upon request" indicates the company is afraid of the battery, or the guarantee would go with the shipment, irrespective of the request. What fool would not request a guarantee if he knew that one existed?

8. They assume he will not hear of it until after sixty days from the time the battery is shipped from the works. Then it will be too late. They are simply gambling on sixty days ignorance.

9. The purchaser orders two cars, one with Exide Hycap and the other with Exide Ironclad. Both identical. He wants to place the Ironclad into the car with Hycaps, but ~~he~~ cannot do it, because the serial number of the Hycap car is not the same as the serial number of the Ironclad car.

10. What about the connections between cells which we know corrode and fall apart? Nothing but the plates are mentioned.

11. It is common knowledge that wood separators do not last over eighteen months. The majority of them only last twelve months. I don't suppose there is a lead burning outfit in the whole town of Key West. That means our Key West friend must send to Pensacola or Mobile for a man with a hydrogen flame outfit. He takes

all the cells apart, breaks a few plates and more than a few jars, in the operation. The owner has to buy new plates at list price. Also new jars and separators at list price. Only the plates come in under the "guarantee".

12. In casting hard-rubber jars, blow holes occur, which do not demonstrate their presence until subjected to mechanical strain. Then the jars leak. When I first produced the Acousticon for the deaf, I used a small pocket storage battery. Three cells per battery. Much trouble from local actions. Tested the jars by filling them with shot, and placing in a box of shot, up to 1/4" of the top. Subjected shot in each compartment to a P. D. of 10,000 volts. Theoretically, the thickness of rubber should stand 20,000 volts. The majority of them jumped through at 2,000 volts. I then tested some large battery jars, and found very few of them that would stand over 3,000 volts. Fault in each case from blow holes. What about 40 jars of Ironclads, and who pays for the cell that is injured by solution leaking out while the cell is charged?

13. The second paragraph of the "guarantee" is superfluous. No other concern has been insane enough to try to make such plates.

14. When you buy an automobile tire, for, say, \$50.00, it is guaranteed for 3,500 miles. If it blows out at 2,000 miles, and you return it to the maker, and provided the blow-out has not been caused by a stone bruise, or by running the tire blown up too hard, or not running it blown up hard enough, or provided the tire is not suffering from stone bruise, you will get a new one on this basis: You are charged with 20/35ths, or 4/7 of 3,500 miles, and

present you can expect to get 4-1/2 inches of tread. The tread is credited with 15,35ths, or 3/7 of 3,500 miles. Hence, by paying \$21.44, you get a new shoe.

You remove the tire from the car at 2,000 miles, before anything has happened to it, but because it is getting ragged looking. You send it back to the factory, and you get your new shoe by paying \$21.44. As a rule, the tire companies are fair in this matter.

15. You buy 33 cells of Ironclad for \$600.00. At the end of say, 10,000 miles, if you have lain down nights and studied the book of instructions, and have neglected your business to follow them, and they "blow out" - down and out with capacity of less than one ten thousandths of an inch per charge, you make a noise like

If you are living in Key West, you must send for somebody to burn the cells apart. Then empty them out, pack them properly, and ship them to the nearest Exide depot" which may be St. Louis. The agent in St. Louis can't decide, and forwards them to the factory. The factory man takes his time to consider it, and we will say, within twelve months (no time specified in guarantee) you learn that by paying \$300.00, you can have another Ironclad. Then you pay freight from St. Louis to Key West, \$50.00 for your lead burning man, and start in again.

16. You buy an Exide Battery, run it a few thousand miles, and then decide you do not want another one. You can't have the battery and time due you, credited on a straight Exide battery. It is Ironclad or nothing.

17. No capacity per charge is specified. If the car will only go three inches per charge, it is up to you to keep charging it and going those three inches for three years, or until the plates are "worn out". The words "worn out" certainly mean capacity to do no

... work whatever."

18. 48,000 miles in three years is only 18 miles per day, but this is reasonable mileage for an electric. Average of an electric car is 4,800 miles per year, or a little over 13 miles per day. On this basis, a pleasure vehicle which has been in commission 365 days in a year, and for three years, would only 14,235 miles within the three years. On a basis of 75 miles per charge, this would only be 200 cycles. 300 cycles is the acknowledged life of a lead cell, so they therefore are calculating on only 47 miles per charge average. This shows they expect the battery to lead capacity.

19. All time for repairs and waiting for renewal plates from the factory, count in on the three years. It is therefore evident that the time feature is of more import to them than the mileage feature.

20. Please note that nothing can be done in the way of renewals, at any price, until the plates are worn out. In this respect, the alleged guarantee is not at all comparable to the guarantee of tire manufacturers, that is itself full of stone-bruise and rim-cutting holes.

21. I can not believe the Electric Storage Battery Company would sign such a guarantee as this, without a few more strings that do not appear. For instance, they say nothing about following instructions for the care and upkeep of the battery. They surely would not send out a guarantee unless it is specified therein that the cells must be cared for as per instructions. If they do not make this proviso, they are laying themselves open perhaps.

22. On the other hand, they may leave out the reference to instructions, so that the battery will be worn out quickly, and

thereby give them an opportunity to cell renewal plates, etc. There is a "nigger" somewhere, or they would not have left those instructions out.

After dictating the above, I notice the second sheet under the guarantee "Knock-out Drops". I did not see it before, but some of these points seem far-fetched. For instance, item #4: A worn-out plate is a plate incapable of doing work, whether it is broken or otherwise incapacitated.

#5. I am not quite sure, but have a book at the office in which I think the price of Ironclad plates is mentioned.

#6. The guarantee will naturally be the one that the Electric Storage Battery Company will "stick" the purchaser on.

#7. is superfluous, because when the Edison Storage Battery Company gives a guarantee with the proviso that the instructions be carried out, if the company finds instructions have not been carried out, they make no mention whatever about a Board of Arbitration to decide the matter.

#11. does not obtain, as no reference is made in the guarantee as to who is to remove the plates from the cell.

#12. speaks of returning the battery intact. The guarantee says nothing about this.

#13. There is no proof to back it up, and a lawyer would give the opinion that if the directions are not included in the guarantee, and no reference to them is made, the owner cannot be held liable or at fault under the guarantee. I do not see that this scheme obtains because a man can, if he desires, throw the battery away after purchas-

ing. If rented, he could not do this. "Approved" tires are mentioned, because the company is hunting for miles, and knows that some make of tires takes less energy to drive the vehicles, than other makes of tires.

I wonder if this guarantee is copyrighted? I would like to publish it alongside of our guarantee, with a few remarks.



[ATTACHMENT/ENCLOSURE]

BATTERY STORAGE  
AUTOMOBILES

Dutch

find some more flaws

in this guarantee -

average mileage in Holland

is 4000 per year in

pleasure vehicles

it don't give any capacity  
at any time



auto  
body

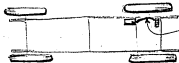
1911

*Handwritten*

*file*

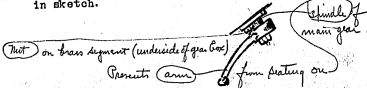
REPORT ON DIFFICULTIES EXPERIENCED  
WITH BAILEY VIC. P.M.S.

- June 17th, 1910 Machine received.
- " 20th, " Found water about 1/2" below top of plates; had apparently not been filled in long time; refilled O.K.
- " 21st, " Head indicated in sketch broke - had been operating on a single strand of wire - replaced by a lead of longer length which should have been there in the first-place.

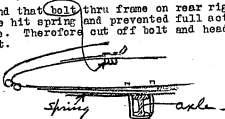



*Broken lead from  
lead left to  
ammeter shunt*

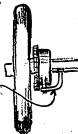
- " 22nd, " Voltmeter of instrument grounded due to instrument case not being properly insulated from metal dash; armature burned out; replaced by Roller-Smith Co.
- " 22nd, " Found that bolt head of the clip on rear half of right front spring was cutting battery crate badly; cut away crate till bolt was free. (Occurred again later on left side.)
- " 23rd, " Found controller lever on top of steering wheel loose; shimmed up with red fibre.
- July 1st, " Found broken rivet in link of Morse chain. Replaced. Steering gear had become very slack and finally located trouble as shown in sketch.



- " 4th, " When lamps were switched on at evening the lamp in right front headlight blew out. Water

- had worked into base of socket and caused short circuit; base receptacle was therefore made water-tight with Okonite tape.
- July 8th, 1910 Had to adjust all brakes as one wheel skidded while the other was loose - and motor brake rattled.
- " 11th, " Found that bolt thru frame on rear right hand side hit spring and prevented full action of same. Therefore out off bolt and headed up flat.
- 
- " 12th, " Found that Morse chain threw grease and dirt into compartment under seat where dusters, etc. were kept; made tin shield to prevent this.
- " 13th, " Tube (spiral metal) on horn broke and horn would not sound; horn poorly placed as well as bulb and tube; repaired tube.
- " 15th, " Brakes adjusted again; had stretched. Controller contacts sandpapered, were rough and burnt.
- " 16th, " Lost motion in drag link of steering gear. Took up.
- " 17th, " No way of protecting goods kept under seat as flap is not secured in any manner. Therefore, ran rawhide strips from each end of bottom of flap thru eyebolts to rear of machine and tied them there.
- " 18th, " Found side chains loose; adjusted, but lock nuts do not seem to hold.
- " 19th, " Bolt at top of steering column kept working loose; slightly upset same and tightened up; now O.K.
- " 28th, " Lock collar at bottom of steering column had backed out also, set screw does not hold. Fixed O.K.

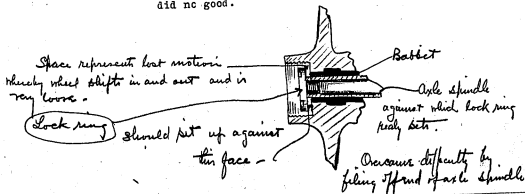
- Aug. 18th, 1910 Bolt in right-hand side of board carrying ammeter shunt broke. Replaced.
- " 21st, " Entire battery crate had shifted over or listed to right-hand side. Shimmed up level at rear.
- " 24th, " Controller fingers burned and pitted. Sand-papered O.K.
- " 30th, " Rear lamp not big enough and did not illuminate number-plate enough. Replaced by larger lamp.
- Sept. 1st, " All tires found badly rim-out; had to be replaced.
- " 19th, " Right front wheel ran hot and scored babbitt. Repaired as well as possible. (All bearings are "plain" - H.G. for auto work.)
- " 30th, " Support used to hold rear left brake band clip in place broke off; lost. (same thing happened twice thereafter, both sides.)
- Oct. 30th, " Steering again very slack; took up lost motion at all joints.
- Nov. 12th, " Side chains again adjusted. One had tightened, the other slackened.
- " 13th, " Front axle broke at points just inside steering heads. Broke from bottom side at speed of 8 m.p.h.
- 
- Nov. 27th, " New axle put in place; took precaution to scrape paint off axle at points of previous failure in order to watch for further flaws.
- Nov. 30th, 1910) In Storage. Rubber buffers put in under  
to Mar. 18th, 1911) rear frame as machine hits  
springs on ordinary bounce.

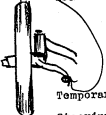



- March 24th, 1911 Left front wheel ran hot and bound. Rabbitt badly scored. Repaired as well as possible.
- " 26th, " Right front wheel ran hot again. Repaired as before.
- April 2nd, " Side chains again needed adjusting. One was tight as a drum.
- " 7th, " Looseness and lost motion in steering gear very bad. Finally located trouble. Arm had worn larger than spindle and nut did not set down on arm but on spindle! Repaired by using washers.



- April 16th, " Controller again needed sandpapering. Method of control by lever on top of wheel is very convenient but allows of lever being left in position between notches with consequent burning of points.
- " 27th, " Bad lost motion apparent in steering heads. Nuts seemed to have backed or bearing to have worn badly; had to adjust heads on both wheels.
- " 29th, " Wheels (all four) by this time were quite loose and rattled. Found that lock rings did not set up against wheel bearings as they should, but against end of axle spindle, and therefore, did no good.



- May 8th, 1911      Another shoe rim out and blew out.
- " 13th, "      Brakes again had to be adjusted
- " 23rd, "      *the ball* (left front wheel) dropped off!  
at 10 m.p.h. on 5th Ave. Found upon investigation that balls are not an integral part of arm or keyed on in any way as they should be, but are merely pushed on and the end of stud loaded up - thus *very poor construction*
- 
- 
- Temporarily repaired.
- " 27th, "      Steering heads again loose. (See Apr. 27th).  
Tightened.
- " 31st, "      Cracks developing in front axle at same identical points that previous breaks occurred.  
Unsafe to run machine.
- June 2nd, "      Right front wheel ran hot and bearing bound  
while running very slowly - useless to repair  
further.

Total distance run 4000 miles.

GENERAL.

- BRAKES: Are of inferior and defective design, should be of the Raymond type. They required constant attention and adjustment and did not have any holding power.
- STEERING: Very poor design throughout and poorly put together and some of the points were really original in their construction. (see detailed report). Could not be kept in good order. Turning radius much too small for city work.
- AXLES: Rear axle seems O.K. But front axle of bronze is apparently wrongly designed, fail-  
ing twice in the same spots at both sides.
- CHAINS: Horse chain O.K., but side chains could not be kept in adjustment for more than 100 miles; method of locking distance rods poor.
- BATTERY: The method of suspending battery in a three point cradle is no good. The machine rocks and cannot be controlled at speeds of over 25 m.p.h., while it will skid on dry cobbles at over 10 m.p.h. It is the most skidding machine I ever rode in and, I believe to the method of loosely hanging the battery crate. This tendency to skid reacted of course on the tires and was probably the cause of their failure and the high cost of tire upkeep. The battery itself is as good today as it was a year ago, has had practically no attention and has some solution for 4000 miles. Sp. gravity is 1.555. Clear as crystal. Has been run up long hills at rates of 80-100 amps. and has been charged at 100 amps. Is affected considerably as regards voltage in cold weather, greatly reducing speed and ability to get thru heavy roads. Several runs were made well over 100 miles on a charge and the battery held a charge for almost four months without loss of voltage while in storage. The battery is far too good for the machine.

**MOTOR:**

G.E. motor gave entire satisfaction and needed no attention whatever during entire service.

**BODY:**

The body is of pleasing lines but of no use whatever for general use; it is very dusty, windy, cold and generally exposed; dash is too low, etc., etc. When made ready for wet weather, it is impossible to see anything and is, therefore, dangerous to drive. It was also found that the rubber apron blew up all around the car, admitting rain and mud and rawhide straps had to be devised to hold down the apron before the car could be used in comfort for everyday rainy work. The leather covered nuts holding the bows to the frame of the top continually worked loose and rattled. Many parts of the car rattled, altho tape and copper wire, rubber, etc. were freely used to dampen the noise. The floor covering was of worn material and soon wore thru. Also the storage room under the seat could not be well used as everything had to be dragged out as the entire floor had to be taken up to water the battery. Leather should also have been used for upholstery instead of the dust-collecting, easily torn and soiled cloth used. The controller was not sufficiently well protected and got wet in rainy weather and corroded.

The entire machine (aside from battery and motor) is practically worn out, all bearings being loose, and everything rattles. The machine is not a commercial proposition.

It would seem most desirable to have Edison Batteries supplied with the Hupp-Yeats electric car, as this machine is seemingly the best built and is the best looking on the market, the torpedo style being ideal for all around use. The method of drive is original and efficient, the body low and comfortable, the batteries accessible and the whole outfit remarkably handsome.



**Edison General File Series**  
**1911. Battery, Storage - Electric Vehicles - Anderson Electric Car  
Company (E-11-17)**

This folder contains correspondence and other documents relating to commercial and technical development of Edison's alkaline storage battery and its use in electric vehicles. Most of the letters are by William C. Anderson, president of the Anderson Electric Car Co. and manufacturer of the Detroit Electric automobile. Some of the items concern Edison's competitors, including the Electric Storage Battery Co. of Philadelphia, manufacturer of the Ironclad-Exide battery. Also included are remarks by Edison regarding the performance, capacity, and efficiency of batteries, rectifiers, and vehicles. A newspaper clipping enclosed in one of Anderson's letters discusses the divorce of Frank J. Kellogg, a childhood friend of Edison.

All of the documents have been selected except for duplicates.

*Auto-Anderson*

ANDERSON ELECTRIC CAR CO.  
FORMERLY  
THE



**Anderson Carriage Co.**

MAKERS OF

*THE*  
**Detroit**  
*ELECTRIC*

OUR ELECTRICS WILL RUN FARTHER ON  
ONE CHARGE THAN ANY OTHER IN THE WORLD



Detroit, Mich. Jany. 13, 1911

Mr. Thomas A. Edison,  
Orange,  
New Jersey.

JAN 16 1911

My dear Mr. Edison;

Yours of the 10th introducing  
Mr. Walter Mallory has been received and can  
assure you it will be my pleasure to go the limit  
with him.

I take it you wish me to take it  
up with him by correspondence and I am therefore  
writing him to-day to know if he cannot meet me  
in New York some day next week.

It was my intention to go to  
New York this afternoon but have decided not to  
leave until Sunday and expect to be in New York  
until Wednesday night. I do not know that I  
will have time to go over and see you but will  
if possible.

Hoping this will find you well,  
with many thanks for your kind letter, I remain,

Yours very truly,

WCA/E

*W. C. Anderson*

Auto-Anderson



ANDERSON ELECTRIC CAR CO.  
FORMERLY  
THE "E"

Anderson Carriage Co.

MAKERS OF  
THE  
Detroit  
ELECTRIC

OUR ELECTRICS WILL RUN FARTHER ON  
ONE CHARGE THAN ANY OTHER IN THE WORLD



Ans 1/25/11

Detroit, Mich.      January 23, 1911

Mr. Thos. A. Edison, President,  
Edison Storage Battery Co.,  
Orange, N. J.

My dear Mr. Edison:-

I thought you might be interested  
in seeing some figures. I admit they are large and I  
think many of them are overdrawn, however, in the main  
they are correct.

to how long can this gas continue to blow off. "Not very  
long" would be my reply if we had that new battery put  
up against them. Are you keeping that in mind? Also  
what are the prospects for our getting one-half dozen  
of the new rectifiers?

Mr. Marr sends me the enclosed  
clipping and letter, which I hand you. Is there to be  
a concolidation? If so, we may look forward to the  
fact that we might be able to receive the degree which  
would entitle us to be listed as Exide users. Please  
note the enclosed.

Yours very truly,

*M. Anderson*

WCA-XP

List of Figures  
Clipping & Letter.

*Anderson there is not  
a word of truth in any  
consolidation. I never had any  
conference, was told by a philo-  
sopher that the new class was  
put out as some of the insiders  
poured water over stock-*

*Edison*

[ATTACHMENT/ENCLOSURE]

DETROIT SATURDAY NIGHT

This Statement Gives an Authentic Estimate of  
Detroit's Automobile Industry for 1911

Compiled by Jacob Nathan.

*Edison*

| Pleasure Cars                        | Capitalization | No. of Cars to be Produced in 1911 | Value of 1911 Output |
|--------------------------------------|----------------|------------------------------------|----------------------|
| Abbott Motor Co. ....                | \$ 350,000     | 2,500                              | \$ 4,000,000         |
| Brush Runabout Co. ....              | 1,350,000      | 9,500                              | 5,000,000            |
| Cadillac Motor Car Co. ....          | 1,500,000      | 11,250                             | 11,375,000           |
| Carhartt Auto Corporation .....      | 500,000        | 300                                | 750,000              |
| Chalmers Motor Car Co. ....          | 3,000,000      | 5,000                              | 9,000,000            |
| E-M-F Co. ....                       | 1,000,000      | 36,000                             | 28,800,000           |
| Ford Motor Co. ....                  | 2,000,000      | 30,000                             | 22,000,000           |
| Herreshoff Motor Co. ....            | 230,000        | 1,200                              | 1,200,000            |
| Hudson Motor Car Co. ....            | 1,000,000      | 5,000                              | 6,500,000            |
| Hupp Motor Car Co. ....              | 500,000        | 7,500                              | 5,000,000            |
| ‡Krit Motor Car Co. ....             | .....          | .....                              | .....                |
| †Packard Motor Car Co. ....          | 10,000,000     | .....                              | .....                |
| Regal Motor Car Co. ....             | 1,000,000      | 8,000                              | 9,600,000            |
| Welch Co. of Detroit.....            | 500,000        | 600                                | 1,800,000            |
| Warren Motor Co. ....                | 300,000        | 1,500                              | 1,950,000            |
| Sibley Motor Car Co. ....            | 150,000        | 1,500                              | 1,725,000            |
| Paige-Detroit Motor Car Co. ....     | 250,000        | 3,000                              | 2,700,000            |
| *Anderson Electric Carriage Co. .... | 1,000,000      | 1,400                              | 3,500,000            |
| Metzger Motor Car Co. ....           | 1,000,000      | 4,000                              | 2,225,000            |
| ‡Lozier Motor Co. ....               | 2,000,000      | .....                              | .....                |
| *Hupp-Yeats Electric Car Co. ....    | 100,000        | 500                                | 875,000              |
| *Phipps-Grinnell Auto Co. ....       | Partnership    | 200                                | 525,000              |
| <b>Commercial Vehicles</b>           |                |                                    |                      |
| Carhartt Auto Corporation .....      | .....          | 50                                 | 125,000              |
| Grahowsky Power Wagon Co. ....       | 500,000        | 1,200                              | 2,760,000            |
| Herreshoff Motor Co. ....            | .....          | 300                                | 300,000              |
| Alden-Sampson Co. ....               | 2,500,000      | 2,500                              | 4,250,000            |
| Van Dyke Motor Car Co. ....          | 1,000,000      | 3,500                              | 2,975,000            |
| Warren Motor Co. ....                | .....          | 500                                | 650,000              |
| Sietz Motor Co. ....                 | 500,000        | 400                                | 1,000,000            |
| *Anderson Electric Carriage Co. .... | .....          | 1,000                              | 2,400,000            |
| Oliver Motor Car Co. ....            | 300,000        | 400                                | 785,000              |
| Universal Truck Co. ....             | 350,000        | 1,000                              | 3,000,000            |
| Bayster-Detroit Motor Car Co. ....   | 250,000        | 500                                | 625,000              |
| ‡Metzger Motor Car Co. ....          | .....          | 1,250                              | 2,750,000            |
| *Phipps-Grinnell Auto Co. ....       | .....          | 50                                 | 132,000              |
| Federal Motor Truck Co. ....         | 100,000        | -500                               | 1,100,000            |
| Superior Motor Car Co. ....          | 150,000        | 500                                | 750,000              |

RECAPITULATION.

|                                           |               |         |
|-------------------------------------------|---------------|---------|
| Total capitalization of 31 companies..... | \$ 33,380,000 |         |
| Total number of pleasure cars.....        |               | 128,950 |
| Total value of pleasure cars.....         | \$118,525,000 |         |
| Total number of commercial vehicles.....  |               | 13,650  |
| Total value of commercial vehicles.....   | \$ 23,602,000 |         |
| Total number of all cars for 1911.....    |               | 142,600 |
| Total value of entire output.....         | \$142,127,000 |         |

\* Not figures not available as company is going under new management and plans are not completed.

† Packard not reported to produce definite figures.

‡ Later plant in Detroit just completed. Company also manufacturing in Plattsburgh, N. Y.

§ Of the 1,250 vehicles specified, 250 will be complete trucks and 1,000 sedan truck chassis.

¶ Electric vehicles.

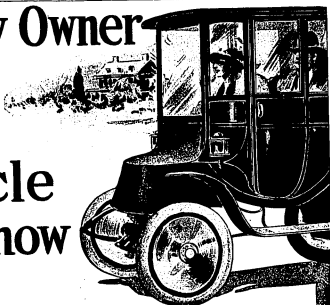
In determining the value of output, the number of cars is multiplied by the average price at which the cars sell. That is, if a factory sells one 1,000 cars at \$200, 400 at \$100 and 5,000 at \$1,000, the 1,000 is multiplied by \$200, the average selling price. In some instances the price of extra equipment is added to determine the total value of the factory's output.

[ATTACHMENT/ENCLOSURE]

· LIFE ·

# What Every Owner of an Electric Vehicle Should Know

*Edison*



First of all the **BATTERY**. Other things are elemental—accepted as matters of course. Electric car makers know how to do their work right.

**THE BATTERY** is the great essential—the selection of which cannot be too carefully made. There are a number of different batteries made, yet more than 90% of all electric vehicles manufactured are equipped with the **"Exide"** Battery. These famous makers use the famous **"Exide"**:

Automobile Maintenance & Mfg. Co.  
Baker Motor Vehicle Co.  
Barton-Doyton Motor Co.  
Broce Electric Vehicle Co.  
Columbus Buggy Co.  
Champion Wagon Co.

Couple Gear Freight Wheel Co.  
Columbia Motor Car Co.  
Hupp-Yeats Electric Car Co.  
Johel Electric Co.  
C. P. Kimball & Co.  
Ohio Electric Car Co.

Phillips-Grinnell Auto Co.  
Rauch & Lang Carriage Co.  
Studebaker Automobile Co.  
The Dayton Electromobile Co.  
The Waverly Co.  
Woods Motor Vehicle Co.

This preponderance of use is due to these facts: The Electric Storage Battery Co. has always made the best battery; it has had more experience; it has the largest plant; it has the most efficient methods of testing and proving its product; it has the world's greatest corps of battery experts constantly searching, inventing, improving—and the result is better and better batteries. The latest product of this great organization is the

## **"Ironclad-Exide" Battery**

—a battery that has two to three times the life; that seldom if ever requires cleaning; that gives increased mileage; that can be installed wherever jars of standard **"Exide"** size are used. The **"Ironclad-Exide"** is immensely superior to any other battery ever made. It is the development of years of quiet but active study and experiment, and long tests already made have proven its entire dependability.

*Write the nearest Sales Office today for the book on this new and most serviceable battery—The "Ironclad-Exide"*

**THE ELECTRIC STORAGE BATTERY CO.**  
1888 PHILADELPHIA, PA. 1911

New York      Boston      Chicago      St. Louis      Cleveland      Atlanta      Denver  
Detroit      San Francisco      Toronto      Portland, Ore.      Seattle      Los Angeles

715 "Exide" Distributors  
"Exide" Depots in Philadelphia, Boston, Chicago, Cleveland, St. Louis, Denver and San Francisco

[ATTACHMENT/ENCLOSURE]

**PHILADELPHIA STORAGE BATTERY COMPANY**



MANUFACTURERS OF

**BATTERIES**

FOR

**COMMERCIAL AND PLEASURE VEHICLES**

ONTARIO AND C STREETS

PHILADELPHIA, PA.      January 21st, 1911.

FRANK S. MARR, PRESIDENT.  
EDWARD DAVIS, TREASURER.  
E. CARLE EVERETT, SUPERINTENDENT.

*Disin*

Anderson Electric Car Company,  
Mr. W. C. Anderson, President.  
Detroit, Michigan.

Dear Sir:-

I enclose a cutting from the Evening  
Telegraph, which may mean much or little. Last  
week the same statement was made by the "Telegraph" but  
I believe was denied by both parties. It is true  
the stock has gone up from below 50 to 54-1/2 within  
a short time.

Very truly yours,

PHILADELPHIA STORAGE BATTERY COMPANY.

*Frank S. Marr*  
President.

[ENCLOSURE]

Electric Storage maintained its prom-  
inence because of another applied ad-  
vance of the company. Details were not  
still lacking in explaining the exceptional  
success of the stock. It was learned  
however, that representatives of Thomas  
A. Edison had been in conference with  
the officials of the Electric Storage In-  
ter-Company within the last few days.

Auto - Anderson

**The Detroit**  
ELECTRIC

**Anderson Electric Car Co**  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN

*Ans. J.*

*Salom battery catalogue  
at hand same as dead  
April 20, 1911  
battery same as claim  
same as result  
Edison*

Thomas A. Edison, Esq.,  
Orange, N. J.

My dear Mr. Edison;

How are you this beautiful weather? Hope you  
are feeling as good as I am.

We have commenced to pull off some exception-  
ally good stunts. We made a run with one of our big  
Brougham cars, the largest Brougham car in the country,  
which may interest you and enclose you report on same.  
We are going out pretty soon to make a killing but we are  
going to get things in shape and know we are right before  
we do it. We intended doing this last Fall but the cold  
weather came on too soon.

*Not successful  
H. J. M.*

I am enclosing you a battery catalogue  
which possibly you know all about. If not, would like you to  
advise me just what there is to it.

Yours truly,

ANDERSON ELECTRIC CAR CO.

*A. B. Anderson*  
President.

WCA-E

Enc( Letter-Booklet)





**The Detroit Electric**

**AMERICAN ELECTRIC CAR CO**  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN.

*Aug 6/1911  
Gambrell*

Auto.  
Anderson

Anderson You must know that I  
June 2, 1911

Mr. Thomas A. Edison,  
Orange, N.J.  
My dear Mr. Edison:

*made no such statement that has here printed  
I cannot go into the papers & deny every  
statement that appears in the paper  
What I did say was that we put enough  
current into a steel car in 5 minutes  
mentioned here with is a clipping of a*

press despatch taken from the Free Press which I take it  
has gone all over the world. *to make the trip & we did it all  
day cells that in a small truck  
good deal of the steam out of me, when I believe there is  
nothing to this but newspaper talk and therefore  
best to wire you as follows:*

*delivered the load*

"Won't you deny press despatch report  
claiming you have perfected new battery,  
lighter weight, half bulk, and can be  
charged in four or five minutes. Such  
report will stop sale of present battery.  
I advise your giving this public denial."

*Recent tests we have made on our*

It is impossible for you to know the  
conditions and handicaps we are up against. Your time and  
energy are spent in the laboratory, and you cannot in touch  
with people who buy batteries as well as the general public.  
Therefore my judgment and experience are certainly of some  
value.  
*Reg. A-6 shows that if you  
take out 2 1/2 hrs. of the capacity  
that then can put in each in a  
few minutes. ~~you can~~  
go as high as 200 amperes in doing  
it. I'm sure if you put on a fan  
The people are anxious that something different*

be invented than even your present battery, or any other battery  
and any intimation that there is something coming out, or going

It looks to me as if the light delivery  
Wagon is going to be worked by  
boosting at every load instead  
of a large battery holding  
enough for all day - ~~but~~ the  
only drawback is the large rectifier  
or Motor Generator necessary where  
there is alternating. *W. J. ...*  
*Edison*

to be perfected immediately holds up the sale. This report will cost the sale of a good many batteries.

I only cite to you the fact, that you leaked out once or twice the fact, that you were going to have a smaller tube battery, or one with a larger capacity and this went from ear to ear and while it has not been published, it did us a world of harm.

Such a despatch as this is going to completely upset the public. I have always understood and believed that not more than one interview out of five that are laid to you is true, - always exaggerated and misrepresented.

I shall await with much interest to know what you have done in this matter and assure you a strong denial is what the public must have, or we will be up against it as well as you.

Will this have your serious consideration and immediate action? Call in Mr. Dyer at once and send out a press despatch that will be helpful to the present battery and place us right before the public.

Yours truly,

AMERICAN ELECTRIC COMPANY  
*W. B. Anderson*  
President

WCA-E

Enc(Clipping)

[ATTACHMENT/ENCLOSURE]

## STORAGE BATTERY WORKS WONDERS

Wizard Edison Invents One At-  
tachable to Any Kind of  
Vehicle at Small Cost.

Special to The Free Press.  
New York, June 1.—Thomas A. Edison thinks he has now invented the storage battery that will overcome the three main objections to the one now in use: weight, bulk and length of time required to charge them. The new battery that he has been working on for months is so light that one large enough to run a butcher wagon can be put into a suit case. It can be charged in four or five minutes, he says.

It was at the meeting of the National Electric Light association this afternoon that Mr. Edison set this match, and a little more he knows about the work that has been taking most of his time recently.

Mr. Edison told of an old delivery cart that he turned into an electric motor in no time. All he did, he said, was to take off the shafts and install one of the suitcase variety storage batteries along with a motor. He said he found that a ten-minute charge would carry it over 50 miles, or it could be charged for smaller periods while loading up after each trip. The whole cost of a day's delivery for the average merchant was about 25 cents, he thought.

Auto



**AMERICAN ELECTRIC CAR CO**  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN.

JUL 3-1911

Wm 7/6

*Anderson*  
*I actually have 3 different*  
*rectifiers all on different*  
*principles now on test*

Mr. Thomas Edison,  
Orange, N. J.

My dear Mr. Edison:

*I cannot afford to put out*  
*anything that is not*

*I received your letter of the 27th*  
and carefully read the same but fear I have over-  
looked acknowledging it, wherein you make an effort  
to straighten out the interview you had in New York  
*extremely practical*  
which has certainly done us a lot of harm and you as  
well. It takes people a long time to forget  
anything like that.

Not later than yesterday I was talking  
car to a gentleman and I suggested the Edison battery  
and he said, "No, I shall not buy a car until this  
new battery comes out." Fortunately I had in my  
possession your letter and explained the whole thing  
and finally I got him squared away so he will take  
my word on the proposition.

This brings up the proposition men-  
tioned in your letter regarding rectifiers. The day  
has long since passed when you promised to do something  
for us in the rectifier line. When I was down there

---2---

last, you said you surely expected to be in a position to make delivery in five or six weeks.

Yours very truly,

WCA-E

ANDERSON ELECTRIC CO.  
*W. Anderson*  
By ..... President.

...ght his little  
parts of the tour  
ally and he only  
ally. I'll look it over  
avoided, that he suffered a  
ally.

**His System.**

"Why do you always tell people to  
give up things they most enjoy?"

"Because," replied the physician, "I am  
pretty sure they won't do it. And then  
if they don't recover they can't blame  
me."—Washington Star.

**A CHAMPION ELECTRICIAN**



DETROIT ELECTRIC EQUIPPED WITH EDISON BATTERY, WITH MR. GEORGE SEATED IN IT.

**HERBERT GEORGE  
ISSUES CHALLENGE  
TO AUTO OWNERS**

**Will Back Edison Battery to  
Outlast Any Other on  
Electric in Contest.**

Everybody knows the flaming red electric roadster that Herbert George drives about town, but few knew anything about the "alings and arrows" that have been directed toward the car because its owner dared to depart from the regulations supposed to be observed by purchasers of batteries.

True to his well-known disposition to have his own way and do things to suit himself, he purchased a new fangled battery invented by his old friend, Thomas A. Edison. This purchase set all the agents of old style batteries after him and every day he was accosted from one to a dozen times in desirive terms concerning his "toy." After running the battery 8,000 miles and finding that it stood up all right he charged it up high, hired a boy and gave him orders to run it down just to see how many miles the thing would make under favorable conditions. When the machine was returned to his garage the speedometer indicated that 211.4 miles had been made.

Mr. George verified the run and now is waiting for the next man to accost him concerning his purchase. "I'll tell you what I'll do to that party," said he. "I'll just offer to run him a race 'till one or the other car stops and the live car shall tow the dead one toward the garage and the loser pay \$200 a mile for the service, and the windings to go to the Old Ladies Home and the loser to take up his residence in the home."

*Buckley auto*

*Personal*



*Thos. A. Edison*  
*Orange*

*% Electric Battery Mfrs.*

*N.J.*

Auto - Test Handwriting



ANDERSON ELECTRIC CAR CO.  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN.

Mo 11/30

November 23

Mr. Thomas A. Edison,  
Orange, N.J.

My dear Mr. Edison:-

I have yours of the 11th and hope you have tested the car on Eagle Rock Hill, N.J. and that you found good speed.

I desire to know if you have tried the experiment after your battery was, say, half discharged. do not have complaints in the early morning on higher runs in any of our territory. Where complaints come to us on the low voltage of the Edison Battery, it is after the charge is, say, one half or more out. This works a great disadvantage to the battery for the following reasons: If an owner takes a car out in the morning with a full charge, he has ample speed and voltage, everything is satisfactory. He and his family uses it in the down town district all day and start home with, say, about half a charge. By the time he reaches his home, more than half out, he is required to climb a steep grade to reach his house, say 6 to 10% for one quarter of one-half mile, he would be stalled or his speed too slow.

This happens entirely too often and it is quite a natural thing too, as many people live in suburban districts and naturally use the car through the day in the down town district. Therefore, when they reach home and get stalled you can realize what happens.

So far as our motor is concerned, the one in your car is a 72 volt, which is the one you saw the blue print of and advised us to use. Towson, Bacon and myself were present at that time and if your letter is now correct to the effect we should have a 60 volt, it was certainly not stated by you at that time.

When we decided upon our 1912 car, it was on the basis of 60 A-4 cells and we have hundreds of there now under construction. Therefore, it will be impossible for us to make any change now. Let me hear from you further on this.

The tests on your car was in all conditions of battery charge I only change it twice a week. You state that under the conditions in the vehicle it is

Walt Watson, I think  
it is the same as the  
ones you should have  
from 72



I am in receipt of a letter from Mr. Bee to the effect, you spent a day in New York and sold a lot of batteries to the breweries.

This brings to mind what has been handed me this morning by our New York truck salesman to the effect, the Adams Express Company are open for the purchase of about 75 electric cars. Our man has been on their trail for a considerable length of time and writes us this morning, that he has felt all along that he had a good show of getting this business but recent developments have changed the situation. The placing of the American Express Co. order for 100 or more electric trucks, equipped with Ironclad batteries has put a damper on the Edison battery.

We have been up against this ourselves. I have been sending Mr. Bee letters, newspaper clippings and quotations on this American Express Co. order and it is a hard blow on your battery as the Ironclad people are publishing it and circularizing by letter the whole country to the effect, the Edison battery was thoroughly tried by the American Express Company for more than a year and it was not satisfactory, or in other words, the Company had decided to go back to the lead.

Of course this is all Tommy not I assume but you can see what effect this has on the selling end of the business. If there is any way under the heavens you can pull a string to stop this Adams Express Company order from getting into Baker's hands or some of these other people, it is surely up to you to do so.

Yours very truly,

WCA/E

AMERSON ELECTRIC CO.  
*W. C. Adams*  
By \_\_\_\_\_ President

to allow a four speed <sup>on grade</sup> when  
battery nearly exhausted, also  
for drop of voltage on these  
grades due to wearing brushes  
field & increased friction in  
the transmission mechanism  
when subjected to increased  
stress. If a 60 volt motor is  
the standard in a truck to  
cover grades when it not  
pleasure in a vehicle = drop of voltage  
in  $1/2$  grade on trucks at the  
various points should always  
be considered & taken after  
pounding even my trucks on heavy  
are making these tests on heavy  
grades & are finding out a lot  
of things they never know  
before

Next  
sheet

2

Regarding American Express  
I warn the manager & it will  
not be so easy for Iron clad  
to fool him hereafter - He  
knows he has been misinformed

Regards Adams Exp I do not  
think they will buy but  
will build their own  
Electric,

Edison

*Cuts - Anderson*



**ANDERSON ELECTRIC CAR CO.**  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN.

December 8, 1911

Mr. Thomas A. Edison,  
Orange, N.J.  
My dear Mr. Edison;

DEC 11 1911

Thinking you might be interested in the enclosed clipping, I herewith hand it to you.

You will hear from us within a very few days relative to the 72 and 60 volt motors.

I note you are making some further tests and if you have anything new on the proposition, would be glad to hear from you.

Yours very truly,

WCA/E

Enc(Clipping)

ANDERSON ELECTRIC CAR CO.  
*W. C. Anderson*  
By \_\_\_\_\_  
Printed on \_\_\_\_\_

THE DETROIT

KELOGG SAYS HE IS TWO MILLIONAIRE

MAKES FIGHT TO KEEP POSSIBLE AWARD OF ALIMONY AT LOW FIGURE.

Once He Was Almost an Actor Man, Maybe; He Is Not Sure About It.

Fighting the efforts of his wife to show that he is a millionaire, Justice Kellogg resumed the stand in Justice Donovan's court, this morning, in the divorce suit brought by Vivian A. Kellogg and store to keep down the alimony he may have to pay his young wife, by claiming his modest business wealth of \$200,000, but said it was true his income from his medicine business runs up high as \$20,000 per year.

"It had to place a value on my interests in these companies," he said. "The returns are uncertain."

Mr. Kellogg admitted owning a five-000 home to his brother, Lyman, after which he had become engaged to his present wife, just prior to their marriage.

Attorney Fraser read a letter from Mrs. Kellogg which stated that she was "at one time I played hockey with you from 1898 to 1902, and that you were a member of the same team."

"At one time I played hockey with you from 1898 to 1902, and that you were a member of the same team," Attorney Fraser read a letter from Mrs. Kellogg which stated that she was "at one time I played hockey with you from 1898 to 1902, and that you were a member of the same team."

"I was in this statement to your wife and I am not sure if it is true or not. I played hockey with you from 1898 to 1902, and that you were a member of the same team."

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"I was in this statement to your wife and I am not sure if it is true or not. I played hockey with you from 1898 to 1902, and that you were a member of the same team."

HE WAS FOR \$25

WHEN AGAINST MER.

has been paid by Attorney Fraser, who is now in court this morning to try to get a settlement of \$25,000 for his client.

Stated that who of a ago. He showed that he had the hand of the ad-ded to the motion of

father. After 25 years of a small business, he don't know but I won't be positive."

"I was in this statement to your wife and I am not sure if it is true or not. I played hockey with you from 1898 to 1902, and that you were a member of the same team."

"I was in this statement to your wife and I am not sure if it is true or not. I played hockey with you from 1898 to 1902, and that you were a member of the same team."

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LY

WI

in this case you are not an actor man, maybe; he is not sure about it.

HE

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IS

IN

THE

MEMORIAL

TO

THE

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AND

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PEOPLE

OF

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MICHIGAN

AND

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THE

WORLD

AT

THE

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LIVING

PEOPLE

OF

DETROIT

MICHIGAN

WEDNESDAY

FEBRUARY 1909

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DETROIT



ANDERSON ELECTRIC CAR CO.  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN

*Mours*

Dec. 12, 1911.

Mr. Thos. A. Edison,  
Edison Storage Battery Co.,  
Orange, N.J.

DEC 14 1911

My dear Mr. Edison:-

Today at the Detroit Club I came in contact with Mr. Jas. S. Stevenson, whose card I attach herewith. You will note that he is general manager of Berry Brothers, Limited. I have known him a great many years, and he is probably one of the best posted men in the United States. If any man knows how to make Varnishes, Japano, Enamels, etc., and has had a lot of experience in the various kinds of metal and wood dopes, his Company, and he himself, surely ought to stand at the head of the list. They are by far the largest people in the Country.

He is extremely anxious to take up with you in person the question relative to the covering of these cans. He tells me he feels positive that he can supply you with a mixture that will prevent the cans from rusting and peeling. It is worth the effort, and all it will cost you is the interview. You will find that he will want to go into it very thoroughly and learn just what he is up against, and I trust that you will call in your laboratory and experienced men and go over it thoroughly. As I stated in my letter a few days ago, it would be money well spent to give someone \$100,000.00 if they could give you a preventative against abuse on the cans. They are bound to be overfilled, they are bound to rust and they are bound to have abuse, and if something can be done, Mr. Edison, that will stop this trouble, it will go a long ways towards simplifying the care of these batteries.

You may, therefore, expect him to drop in on you within the next week or ten days, and I hope that you will be on the job and that something will be worked out that will be of material benefit.

Yours very truly,

ANDERSON ELECTRIC CAR CO.

*J. S. Stevenson*  
By \_\_\_\_\_ President

WCA-EP  
Card.



[PHOTOCOPY]

*TNC - [unclear] - [unclear]*



ANDERSON ELECTRIC CAR CO.  
PLEASURE AND COMMERCIAL CARS  
DETROIT, MICHIGAN

*Dec 29*

*Harry  
I will be here  
just over 9th day  
Keep me posted  
on the amount that  
I get  
with  
you*

December 29, 1911

Mr. Thomas A. Edison,  
Orange, N.J.

Dear Mr. Edison;

Referring to the appointment with Mr. Henry Ford  
we have arranged it as follows: I will leave here Sunday the 7th  
or Monday the 8th, arriving in New York in ample time to meet  
Mr. Ford on the morning of the 9th and we will arrive in Orange  
at 10 or 11 o'clock.

Therefore have your matters arranged  
accordingly, so that you can have several hours interview with  
Mr. Ford on the ignition battery proposition, as well as another  
matter he wants to take up with you.

If, for any reason this appointment cannot  
be kept, you must wire me ahead. I am very anxious to know what  
will come out of this and here is hoping it will be something  
that will be of benefit to all concerned.

Yours truly,

WCA/E

ANDERSON ELECTRIC CAR CO.

*W.C. Anderson*  
President

*Battery Genl*

- C O P Y -

THE ANDERSON CARRIAGE CO.

NIGHT LETTER

Winnipeg, Man. Dec. 29, 1911.  
11/30

R. G. Larimer,  
Care Detroit Electric,  
Detroit.

Thirty-two below yesterday, to-day trucks working 11 hours  
continously each day, -temperature of batteries at eight P.M.  
each evening 60 degrees. Success of Edison Battery now  
assured for all degrees of weather. Hurry back.

J. A. McArthur

3.12 A.M.



**Edison General File Series**  
**1911. Battery Storage - Electric Vehicles - Promotional (E-11-18)**

This folder contains two drafts, prepared by Edison's assistant, William H. Meadowcroft, of a promotional booklet entitled "The Family Electric." The booklet includes an essay, cuts from advertisements, and testimonial letters. Each version contains corrections by Edison. Only the second draft, which incorporates his earlier copyediting and is more complete, has been selected. The cover of the booklet bears a note written by Meadowcroft on October 26, 1921.

Approximately 20 percent of the documents have been selected. In addition to the earlier draft, the items not selected include additional testimonial letters, newspaper clippings, and draft notes written by Meadowcroft.

Related material can be found in E-11-15 (Battery Storage - Edison Storage Battery Company).

# THE FAMILY ELECTRIC

*Mr. Edison  
Here is some work  
I did in 1911 - Re-in-  
vented many electrical bonding  
methods -  
Meadowcroft  
Oct 26/21*



can find out for an absolute certainty the past and present performance of his "electric horse", that is to say, the class of battery which is to move his vehicle.

We have therefore prepared this booklet in order that we may place in the hands of persons contemplating the purchase of an electric vehicle a few facts upon which to base their judgment as to the true merits of different types of storage batteries, which form the basic element for the operation of this class of vehicles.

The main consideration with which the prospective purchaser is concerned are: Mileage, reliability, simplicity and economy. These points will be all considered in the following pages, and will be treated from the view point of the plain every day person who may be without technical or electrical knowledge and is desirous of understanding the real facts. Once upon a time, as the story books say; there was only the one kind of storage battery available for operating an electric automobile. This kind was known as the lead-acid battery, and although it was heavy, clumsy, corrosive, troublesome to manage as a spoiled child, and, above all, shortlived, it was the only obtainable method of using electricity in portable form for operating a vehicle. Despite such serious drawbacks, those who appreciated the convenience of the electric car struggled along, hoping for better days.

And now the better days have come with the introduction of an entirely new and different type of alkaline storage battery invented by Mr. Edison after many years of thought, labor and experiment. So different is this battery in results that on a single

charge an electric vehicle can be driven more than twice the mileage with Edison cells of the same weight.

From the time when Mr. Edison completed this new type of alkaline storage battery he has been convinced that one of most useful and appreciated applications would be in electric automobiles for family service. With this idea in mind, he made thousands of abnormally severe tests and experiments which gave him absolute assurance of that degree of dependability and reliability in his battery that were indispensable factors in planning for the "Family Electric", of which both utility and pleasure are demanded and expected.

For years without number the family horse and carriage were regarded as synonymous with steadiness and usefulness. For running errands about town, for shopping and calling, and even for an occasional pleasure jaunt, the horse and carriage have been of great utility in their day and generation.

With the advent of the automobile, however, there dawned an era of vastly greater possibilities in the matter of daily travel. The first preference of the householder was naturally in favor of an electric car for family use. Its noiselessness, cleanliness and easiness of operation contribute to make it an ideal vehicle.

Besides, the absence of complicated machinery removed many of the terrors which mechanism has for the female mind, and made the electric vehicle one which could be easily and confidently operated by a woman.

The only practical and available source of electric current for such vehicles is the storage battery, and as stated above, the only class of storage battery that was obtainable for

some years was the kind known as the lead cell, which is made up of lead plates immersed in strong sulphuric acid.

Lead storage batteries are of great weight for their current capacity, and require heavily constructed vehicles to carry them. Hence, their possible radius of travel, at the very best, is comparatively small to begin with. These lead batteries have a number of serious inherent disabilities. The most distinctive one is that they begin to deteriorate soon after they are put in use.

The principal cause of such deterioration is inevitable in a lead-acid battery. Its operation depends solely upon chemical reactions effected in particles of finely divided lead oxides (called "active material") which form part of the plates. These reactions, occurring during charge and discharge, disturb the particles physically, thus causing their gradual detachment from the plates. They fall and accumulate at the bottom of the cell, and in that condition are worse than useless. This falling off of active material is increased by jarring or jolting received by the cell, as in an automobile, also by improper charging and from other causes. Inasmuch as the capacity of the cell is proportionate to the amount of active material responding to chemical reactions, it is quite obvious that by reason of the inevitable and continual falling off of active material there is an always increasing loss, and, therefore, the capacity of lead storage batteries to deliver current diminishes constantly and continuously; the resultant effect being that the radius of travel of the vehicle grows less and less. Usually, in practice, lead batteries deteriorate so greatly in one year's use that new plates, or perhaps an entirely new battery, may be necessary, and where poorly cared for, in a lesser time.

5

In view of the development of such a vital disability in the early history of electric automobiles added to many other serious troubles inherent to the lead cell, it is not surprising that after a few years of experience with vehicles operated by the lead battery there was a serious decline in the sale of such cars for family use.

But with the comparatively recent introduction of the Edison Storage Battery, in which these troubles do not appear at all, there has been a great revival in the manufacture and sale of electric vehicles. By reason of the additional fact that the Edison Battery weighs only about one-half as much as the lead battery for the same power, manufacturers are now able to design new types of cars of much lighter weight and with far more graceful lines than were formerly possible.

Thus, the immediate result of the coming of the Edison Storage Battery has been the creation of many types of handsome, light and easy running "Family Electrics", having a mileage capacity of 100 miles or more on a single charge of the battery.

Mr. Edison's thoroughness of method is well known. He was thoroughly conversant with the possibilities of his storage battery, but he also knew that the previous experience of the public with the lead battery had created a feeling of distrust with regard to storage batteries in general. For the purpose of dissipating any distrust as to his battery, he first made an abnormally severe test of its mechanical strength and of its ability to retain its active material in place. For this purpose he constructed a special apparatus operated by a motor. By means of this device a cell of his battery was tested, being raised half an inch and then dropped with a sudden jolt. The battery was jarred in this manner

more than a million and three quarter times, at the rate of about 70 volts per minute. The tremendous strain thus imposed was many times greater than would ever be met with in practice, but the electrical capacity of the cell was not in any way impaired, thus showing that there had been no loss of active material.

It may be mentioned incidentally that by reason of the rugged strength of its construction, in which steel, iron and nickel are employed, the mechanical integrity of the cell was also unimpaired by this very severe test.

In the next place Mr. Edison proceeded to demonstrate by actual practice that his battery was capable of making long mileage runs under ordinary conditions, and without picking out especially level roads. He therefore planned a series of test outing and city runs to be made by electric automobiles operated by his storage battery.

These runs were to be made under normal conditions to cover not only extended city runs but also tours into all parts of the surrounding country, whether hilly or otherwise, in order to demonstrate by actual experience just what can be done with the "Family Electric" under the ordinary requirements of family life. In other words, he aimed to show that, when operated by the Edison Storage Battery, this class of vehicle can be used for shopping, calling etc., and can also be used afterwards for an outing of no small extent without the necessity of first recharging the battery.

He was also well aware that, by reason of the fact that the Edison Storage Battery increases in capacity after it is put into use, the results shown by these tests can not only be duplicated but



that they will naturally be bettered in actual practice.

These test runs are shown as advertisements in the following pages, as illustrative of what has actually been done and what may be done again by the owner of an electric vehicle operated by the Edison Storage Battery.

# The New Edison Storage Battery

## Tests of the "family electric" vehicle "Day Outing" Trip No. 1

MR. EDISON is conducting a series of tests of different makes of the "family electric" type of motor vehicles equipped with his new battery, to determine in actual practice just what mileage can be obtained with varying over all kinds of roads, including hills and level country, with this type of car.

These trips will be called "day outings" between two predetermined points and return, on one maximum charge of the battery. In each case after the return of the vehicle over the established route, it is run to a standstill to entirely exhaust the battery and determine what excess mileage it still retains—giving the user beforehand certainty of a full round trip with a safe margin of excess mileage to spare.

There will be twelve of these "day outing" trips conducted by Mr. Edison. They will be run at weekly intervals from points permanently equipped for charging, and the results published.

### Results of "Day Outing" Trip No. 1 with Detroit Electric

Carrying two persons; total weight 2,460 pounds.

Start 40th Street and Lexington Avenue, New York, 7:28 A.M.

Returned to starting point 5:02 P.M.

Actual running time, 6 hours 58 minutes.

Distance traveled in covering this route, 84 miles.

Car, run to a standstill after completion of trip, showed 18 miles surplus.

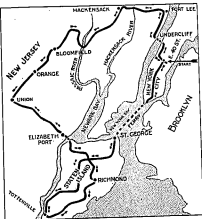
Total mileage for the day, 102 miles on a single charge of the battery.

Roads generally good—many heavy grades.

Edison Storage Battery Co., 121 Lakeside Ave., Orange, N. J.

Up to the present, but two of the several makers of electric vehicles have equipped their cars to use the new Edison Storage Battery. These are the Anderson Carriage Company of Detroit, making the Detroit Electric, and R. M. Bailey & Company of Amosbury, Mass. Other makers will doubtless follow and Edison tests of their cars will be made later.

Both of the vehicles being used in these tests (the Detroit and the Bailey) were run 1,500 miles over various roads and six-year grades before the tests were begun. The Edison Storage Battery Company has no interest in either of these vehicles, other than to prove that with the new Edison Battery, the "family type" of electric, from now on, will be the car that can be relied upon, can be run by anyone after a few minutes' instruction, is absolutely safe, infinitely less expensive to maintain than a gasoline car and will still be in active service years after the gasoline car has jarred itself to pieces.



**Results of  
Edison "Day Outing"  
Trip No. 2  
with Bailey Electric**

Total weight of car, carrying two persons, 2,345 pounds.

Start 40th Street and Lexington Avenue, New York, 7:40 A.M.

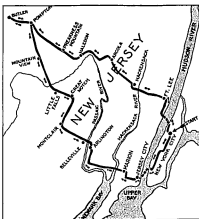
Returned to starting point 8:46 P.M. Actual running time, 5 hours 6 minutes.

Distance traveled in covering this route, 76 miles.

Car, run to a standstill after completion of trip to show margin of excess mileage still in the battery, gave 40 miles surplus.

Total mileage for the day, on a single charge of the battery, 116 miles.

Country mountainous and beautiful, many heavy grades, some 10%, but roads average good.



**Edison "Day Outing" No. 3**

**Results accomplished  
on Edison "Day Outing"  
Trip No. 3  
with Detroit Electric**

Total weight of car with two persons, 2,448 pounds.

Start, 40th St. and Lexington Ave., New York, 7:23 A. M.

Returned to starting point, 4:56 P. M.

Actual running time, minus time consumed waiting for ferries and stop for dinner, 6 hours 31 minutes.

Distance covered in accomplishing this route, 82½ miles.

Car, run to a complete discharge of battery after finish of route, gave a margin of 30 miles excess.

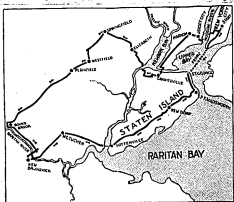
Total mileage for the day on a single charge of the battery, 122½ miles.

Fine landscape, good roads generally, but a number of stiff 0% grades.



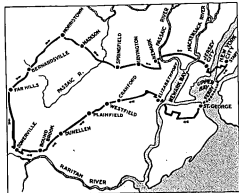
**Results accomplished on Edison "Day Outing"  
Trip No. 4, with Bailey Electric**

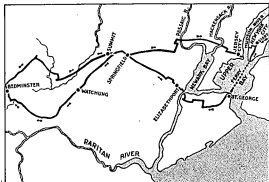
Total weight of car with two persons, 2,357 pounds.  
Start 40th Street and Lexington Avenue, New York, 7:16 A. M.  
Returned to starting point, 8:48 A. M.  
Actual running time, minus time consumed waiting for ferries and stop for dinner, 6 hours 24 minutes.  
Distance covered in accomplishing this route, 87 1/2 miles.  
Car, run to a complete discharge of battery after finish of route, gave a margin of 2 1/2 miles excess.  
Total mileage for the day on a single charge of the battery, 139 1/2 miles.  
Some pretty country; roads on the average good.



**Results accomplished on Edison "Day Outing"  
Trip No. 5  
with Detroit Electric**

Total weight of car with two passengers  
2,648 pounds.  
Start 40th Street and Lexington Avenue, New York, 7:30 A. M.  
Returned to starting point, 6:40 P. M.  
Actual running time, minus time consumed waiting for ferries and stop for dinner, 7 hours 52 minutes.  
Distance traveled in covering this route, 98 miles.  
Car, run to complete discharge of battery after finish of route, showed 15 miles surplus.  
Total mileage, for the day, on a single charge of the battery, 113 miles.  
Roads generally good—many heavy grades.—strong head wind equivalent to 2 1/2% grade.





**Results of Edison  
"Day Outing"  
Trip No. 6  
with Bailey Electric**

Total weight of car, carrying two persons, 2,345 pounds.

Start, 40th Street and Lexington Avenue, New York, 7:21 A. M.

Return to starting point, 8:30 P. M.

Actual running time, minus time consumed in waiting for ferries, dinner, etc., 7 hours 40 minutes.

Distance traveled in covering this route, 584 miles.

Car, run to a standstill after completion of trip to show margin of excess mileage still in the battery, gave 23 miles surplus.

Total mileage for the day, on a single charge of the battery, 408 miles.

Country scenic and beautiful, heavy grades, many 15%. Head wind equal to 5% grade. Roads mostly poor.

**Edison Test No. 7**

*Two  
Parallel  
Columns,  
well  
separated*

**Hill Climbing Test**

with Bailey Electric

**21 times up Fort George Hill**

Fort George Hill is 2138 feet in length and 11% grade. This means the ~~New~~ Edison Battery lifted 2387 pounds of car and load, almost *one mile vertically* in 8 miles

**on one charge**

**City Test**

**on one 7½ hour charge**

with Detroit Electric and Edison Battery

Ran 1½ to 2 hours every day for seven days.

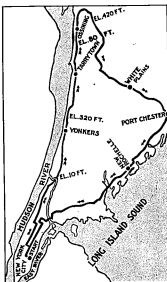
Cost of charge \$1.42, or 21 cents per day.

Average speed 12.32 miles per hour—120 miles total.

Total weight of car and the two passengers 2470 pounds.

### Results accomplished on Edison "Day Outing" Trip No. 8, with Detroit Electric

Total weight of car with two persons, 3,448 pounds.  
Start 46th St. and Lexington Ave., New York, 7:53 A. M.  
Returned to starting point 3:50 P. M.  
Actual running time, minus time consumed in stop for dinner, 8 hours, 24 minutes.  
Distance covered in accomplishing this route, 84 miles.  
Car, run to a complete discharge of battery after finish of route, gave a margin of 37 miles excess.  
Total mileage for day on a single charge of battery, 121 miles.  
Some pretty country roads on the average good.

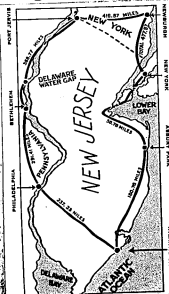


Edison Test No. 9

## Six-day Tour

with Detroit Electric

478 miles—average 68 miles per day



This run, from New York via Asbury Park and Atlantic City to Philadelphia, and return via Bethlehem, Port Jervis and Newburgh, shows the consistent dependability of the electric pleasure vehicle with the proper battery equipment over a period of continuous hard road service.

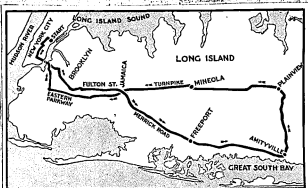
On this trip, through hilly and even mountainous country, some of the best and worst roads in Pennsylvania and lower New York State were covered. Yet in many instances, an average speed of 15 miles an hour was maintained, and the run from Atlantic City to Philadelphia, 62.62 miles, was accomplished at the rate of 19 1/2 miles an hour. This average speed for the distance is unprecedented for electric vehicles, even on city pavements, and would not have been possible with equipment other than the new Edison Storage Battery.

## Edison "Day Outing" — Test Trip No. 10

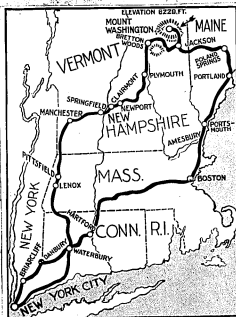
with Bailey Electric

### RESULTS OF EDISON "DAY OUTING" TRIP No. 10

Total weight of car, carrying two persons, 2,338 lbs.  
Start, 40th St. and Lexington Ave., New York,  
7:12 a. m.  
Return to starting point, 2:31 p. m.  
Distance traveled in covering this route, 83 miles.  
Car, run to standstill after completion of trip to  
show margin of excess mileage still in the bat-  
tery, gave 4½ miles surplus.  
Total mileage for the day, on a single charge of the  
battery, 136½ miles.



## Edison Test Trip No. 11.



**This**  
**1000-mile "Ideal**  
**Tour" and 7 miles**  
**up Mt. Washington**  
**accomplished by**  
**"Detroit" and**  
**"Bailey" Electrics;**  
**proving by this re-**  
**markable perform-**  
**ance that the elec-**  
**tric vehicle with**  
**Edison Battery**  
**equipment will**  
**cover any route**  
**that a gasoline car**  
**can cover.**

Of the prominent makes of electric vehicles now regularly equipped with the Edison Storage Battery—"Detroit," "Bailey," "Baker" and "Waverley"—two vehicles, a Detroit and a Bailey, started from New York on Sept. 17th, and successfully completed what is known as the "Ideal Tour." The cars started in opposite directions, each carrying two men and 300 pounds of extra weight in tools, tires and chains. Meeting at Bretton Woods, it was decided to attempt the climb of Mt. Washington—6,229 feet high, with grades varying from 1½ to 27%. That an electric vehicle, equipped with a

2½ H. P. motor and its storage battery, should even attempt a climb that taxes high-powered gasoline cars to the limit, is unheard of. Yet 7 miles of the 8-mile climb were accomplished, the last mile being made impossible by blinding rains and terrific winds.

This remarkable performance proves that the electric vehicle is no longer a luxurious toy for city use, but, equipped with the Edison Storage Battery, is the practical car of the present and the future—the car that any one can operate and that almost everyone can afford to own and maintain.

## Edison Test No. 12.

### Four runs by the Baker Electric

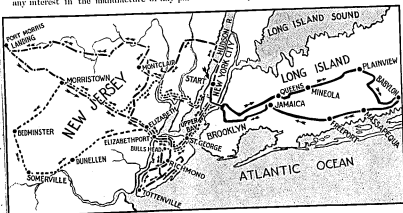
averaging 144.35 miles on a single battery charge.

These performances are additional proof of Mr. Edison's contention that the "Electric" is the vehicle of today.

Neither Mr. Edison nor his company has any interest in the manufacture of any par-

ticular electric vehicle, further than proving that the family type of electric vehicle equipped with the Edison Storage Battery is the car that the average citizen can afford to own and operate.

Best  
A



| Symbol of Run. | Total Mileage on one Battery Charge. | Average Speed Miles Per Hour. | Actual Running Time Hr. Min. | Mileage Over Run Shown by Man. | Excess Mileage After Covering Route. |
|----------------|--------------------------------------|-------------------------------|------------------------------|--------------------------------|--------------------------------------|
| —              | 117.9                                | 10.82                         | 9 34                         | 103.6                          | 14.3                                 |
| —              | 137.3                                | 9.78                          | 9 45                         | 95.4                           | 41.9                                 |
| —              | 172.1                                | 10.93                         | 9 32                         | 90.9                           | 81.2                                 |
| —              | 150.1                                | 10.42                         | 9 47                         | 102.1                          | 48.0                                 |

Since the making of the foregoing series of tests, numbered from 1 to 12, many other mileage runs have been made by the "Bailey", "B. Detroit" and "Honey" ~~cars~~ operated by Edison Storage Battery. These have been made independently by the manufacturers of the vehicles, and of each run show even greater mileage than appears in the preceding, indeed in some instances, runs of considerably more than 200 miles have been made <sup>in a city on the edge of the Battery</sup> on the edge of the Battery.



What do These Test Runs Mean to a Purchaser?

The modern desire to encompass in a given time a greater radius of travel than the physical limitations of the horse will allow is responsible for the rapid development of the automobile.

Consequently, the automobile is largely employed as a family conveyance, and its adoption as such is being greatly extended from day to day. At the present time there is undoubtedly a greater number of gasoline vehicles than electric in use because of the previous deficiencies of the latter, owing to the use of lead batteries.

There is no doubt whatever that in nine cases out of ten a family would much prefer the noiseless, cleanly, odorless, simple and more easily operated electric vehicle if reasonable mileage and reliability can be assured. There is positive proof of this fact in the tremendously increased sale of electric automobiles since the Edison storage battery has been introduced on the market.

The questions naturally arising in the mind of a person who is contemplating the purchase of an electric vehicle for family use, are: How much use can I get out of it? Can I use it for shopping and calling and then take a run into the country and get home again without the risk of the battery giving out? If I don't make any long runs, how much use of the vehicle can I rely upon for ordinary family purposes without having to recharge the batteries?

The answers to these questions will be found by an examination of the Trial Runs given in the preceding pages. Take, for instance, Trip No. 5 - The results show that a person living in New York might have used the vehicle for shopping, etc., in the morning and afterwards taken a pleasure run out to Morristown, Far Hills and

Somerville, New Jersey, covering nearly 100 miles during the afternoon and evening and still have gotten back home with an ample margin of current. The other Trial Runs, such as Nos. 1, 2, 3, 4, 6, 8, 10 and 12 fully demonstrate similar possibilities of a liberal family use of the vehicle around the city together with a tour into the country approximating 100 miles, without any necessity for a nervous apprehension of being "stuck" by the way. It should be understood, however, that these runs were made on the maximum charge that the battery would store and the runs were made by an expert. The ordinary owner, until he became expert would probably not get more than <sup>75</sup> ~~80~~ of these mileages and less if the battery was not fully charged.

And what is most encouraging of all is that the owner of such a vehicle operated by the Edison Storage Battery, on returning home, can connect his battery with the charging current, leave it and go to bed to sleep peacefully in full assurance that in the morning his battery will be re-charged and the vehicle ready to give him at least as much travel as it did the previous day, with as great a degree of certainty as before.

If the prospective purchaser should desire to use the vehicle every day for running about the city, without taking any trips into the country, the "City Run" of Trial Test No. 7 will show what may be expected for this class of service. It will be seen from the results of this test that the average mileage was a trifle over 17 miles a day for seven days, or a total of 120 miles, with a single charge of the battery, and without paying any attention to the battery - meanwhile, such a result would be absolutely impossible with a lead battery of the same capacity and twice the weight. In the

first place a lead battery must be carefully watched and recharged at once after a certain quantity of current has been taken out. In the next place such mileage could not be made, and if the lead battery were not recharged promptly upon arriving at the proper point, it would be badly sulphated and probably ruined. Under the conditions of city use shown in Trial Test No. 7 the Edison battery would need charging only once a week. And, differing from the lead battery, the Edison battery need not be charged immediately but may stand discharged without harm.

The Edison storage battery thrives on work, and, barring accident or the grossest kind of carelessness or negligence, it will thus continue to perform its full duty up to its rated capacity, day in and day out, month after month. Our confidence in this, as exhibited by our guarantee, is born of knowledge and experience obtained from practical work.

#### The Customer's Pocket Book.

The reader of this pamphlet is probably a prospective purchaser of an electric vehicle, and the main question with him is to get the greatest value for his money. As to what constitutes the "greatest value", the following principal items may be enumerated:

1. A continuation of uniformly high mileage runs on single charges of the battery.
2. Low cost of upkeep of battery for repairs and renewals.
3. Little care or expert attention or danger of ruining the battery by lack of care.

#### 4. Long useful life of battery.

A person who is contemplating an outlay of two thousand dollars or more for an electric car is not usually actuated by "bargain-counter" motives, and ordinarily is willing to spend a few hundred dollars more if he can secure such advantages as these. And we claim and can prove beyond doubt, they are secured in a vehicle equipped with the Edison battery.

We do not attempt to deny, in fact, we make the statement, that a set of Edison storage batteries costs more than a set of lead-acid batteries in the first cost of equipping a vehicle, in fact, they cost twice as much and, therefore, the customer is required to make a greater investment when purchasing a car with our batteries. But in doing so he is securing an equipment that is really the most economical because it conforms fully to the items of reliability, low cost, simplicity and long life above enumerated. The first year of service will amply prove this statement. The Edison battery will outlast three lead batteries and give far more mileage.

By reason of inherent and absolutely unavoidable complexities in its very nature, the lead-acid battery cannot possibly be made so as to compare with the Edison storage battery. A few reasons why the latter is superior to the lead-cell will be found on page

In addition to these points of superiority we may point to the fact that in all the years of experiments on his battery Mr. Edison's constant aim has been to eliminate the necessity of technical or expert attention after it has reached the customers' hands. Not only has he succeeded in this direction, but he has also brought it to such a state of perfection as to be practically "foolproof"; thus providing for the ordinary carelessness and neglect of attendants.

## AS TO COST OF OPERATING ELECTRIC VEHICLES.

There is a popular impression that the cost of operating and maintaining an electric automobile is far beyond that of a carriage and team of horses. In making such a comparison, however, many qualifications should be considered, among which the following may be named:

(1) The automobile is capable of making mileage that in both time and extent is absolutely impossible to horses by reason of their physical limitations.

(2) If required, an electric vehicle with Edison battery could be used for travelling, say 50 to 100 miles a day every day, if roads were reasonably good. Such a performance would be beyond the possible endurance of horses.

(3) Horses need feeding at least twice a day every day in the year. They must also receive frequent grooming and constant care to keep them in condition. A family electric with Edison battery needs absolutely no attention when not in use. The owner might bring it in from a run, lock it up in his garage and go off to Europe for a year, and on his return find it ready for immediate use, after recharging. Incidentally, it may be remarked, such a course of procedure would absolutely ruin any other storage battery than the Edison.

(4) A team of horses, if kept in the owner's stable, need the services of a stableman. This man may also act as coachman, but it imperatively required that he shall be experienced in the care of horses. To run a family electric having Edison storage battery, it is not necessary to have a chauffeur or special employee. It may be operated by any man who works around the place, provided he has ordinary intelligence, the owner himself, or any of his family, including the ladies, can run such a car without any trouble. The vehicle itself needs but little attention

beyond oiling, cleaning and charging. As to the latter operation, very ordinary intelligence is sufficient and only a few minutes of personal attention.

(5) For two horses suitable stables are required, with lofts or compartments for feed, hay and straw. Such building or buildings, together with carriage house and the proper arrangements for containing stable refuse necessitate structures of ample dimensions. Their cost and maintenance form no inconsiderable item in the total expense of keeping horses and carriages. For a family electric only a small, simple building is required as a garage. A structure large enough to comfortably house the vehicle is all that is necessary. A portable house costing a few hundred dollars would be ample. For this reason, many persons who for lack of space are obliged to keep their horses and carriages at a livery stable, would be able to keep a family electric in a small garage on their own property. In many cases it would be possible to store the family electric in the basement of a residence by having an opening made in the lower part of the house and a sloping driveway leading to it. This, however, would be feasible only if the car were furnished with an Edison Storage Battery, for unlike the lead battery, it gives off no corrosive fumes and is entirely odorless.

It should be constantly borne in mind that when considered in comparison with horses, the greatly increased mileage and the unlimited use of the electric vehicles are factors of supreme importance.

#### THE SALESMAN.

The average salesman or agent has an enthusiastic ambition to close a deal. His business is to make sales, and all sales bring grist to his mill. Hence, he usually follows the line of least resistance. If he is working on commission he makes his per centage on every sale, whether it be large or small. If he is working on salary, each deal he closes increases his prestige with the house he represents. In either case he will do all he can to sell something to the enquirer.

Now, this may be all right from the salesman's standpoint, but in practice the principle does not always work to the advantage of the customer whose chief desire is to obtain a good and reliable article. Naturally, he wishes to keep his investment down to the lowest point that is consistent with the attainment of his desires.

It is by reason of the conflict of these principles that many enquirers frequently become purchasers of low-priced electric vehicles with lead batteries that cause them much disappointment by imperfect performance later on. The average prospective purchaser is not an electrically technical person. His activities being in other direc-

tions, he knows but little about batteries, and has made no study of different types. Consequently, a battery to him is a battery and nothing more; simply a contrivance for furnishing some electricity.

If, therefore, he is shown several types of electric vehicle, and in each case two prices are named for the vehicle, the lower price including a lead battery and the higher price the Ediech battery, it will be quite natural that he will enquire the reason of the difference. The salesman will explain to the best of his ability. If his explanation is not full and explicit; if it is not impartial; if it does not meet the customary habit of mind of the enquirer; and if the intending purchaser has not made any previous investigations of batteries, there may be a tendency towards minimizing the amount of investment.

The salesman is quick to perceive this, and is apt to follow the line of least resistance. He does not want to lose a sale, and therefore is not inclined to elaborate upon the possible difficulties that the purchaser is likely to encounter with the lower-priced outfit. Thus, the sale may be consummated and the purchaser may find that in the long run the minimum of investment is very far from being the most economical.

If, on the other hand, the prospective purchaser has taken the trouble to make some investigation of the real facts concerning the two distinctive types of Storage Battery, and has ascertained with certainty, as can easily be done, their actual performance in several years of work, he will be in position to



be independent of the opinions of others, and will insist upon an Edison Battery with his vehicle.

In this way he will be assured of the highest possible use of his automobile with the minimum of expense and trouble.

"MONEY TALKS"-SO DO WRITTEN GUARANTEES.

The written guarantee of a responsible concern is equal to money. This is a self-evident proposition. Therefore, such a guarantee is an absolute protection to a purchaser. With it, no element of chance enters into the transaction so far as the basic element of operation is concerned; and the very fact of its offer implies that we know by experience what the Edison Battery will do and are thus willing to back our knowledge.

We would like to be able to state definitely what real life an Edison storage battery may be expected to have, but we have been in business only about six years, and that is not long enough to enable us to make specific statement thereof. We may say, however, that quite a number of cells of a former type (inferior to the present type) have been in delivery service in New York for more than five years and are still doing good work. Some of the new type "A", have been in similar service nearly three years and, on a recent test, show a great increase in capacity without deterioration of any sort.

We are so certain of its long life, that we are willing to guarantee that the Edison battery will be capable of

giving at least ninety percent (90%) of its rated capacity after ~~the~~<sup>4</sup> years from date of delivery to the purchaser, when used in a delivery wagon or in trucking service where our inspectors have access. In pleasure vehicles, where the conditions are less strenuous and exacting, a life even longer than that should be expected. It will be quite obvious that we could not afford to give such a guarantee if there were not a wide margin of safety for us. This means, of course, that the customer will benefit to a much greater degree than the guarantee assures.

#### THE NUB OF THE MATTER.

You, the reader of this booklet, may be contemplating the purchase of an electric automobile for the use of yourself and family. You may be a merchant, banker, broker, lawyer, doctor or other kind of business man and have had no opportunity, or possibly, inclination to make a study of electricity or storage batteries.

You want an electric vehicle because it is clean, simple, noiseless, odorless and easy to operate, but you want to be sure that it will give you reasonable mileage and continuous service, month in month out, year after year, without requiring a lot of trouble and expense for expert attention and repairs.

Can you get it?

Our answer is "Yes, if you buy a standard vehicle with Edison storage batteries to operate it."

No man need remain in the dark as to the possibilities

and actual performance of the different classes of storage battery. The facts may be ascertained as definitely as the days of the week. We have given herein the facts as to our battery, both by actual road tests and laboratory results, and are prepared to stand by them.

If you will investigate impartially, intelligently and insistently, there is no doubt about your decision, - it will be to use the Edison storage battery and no other.

EDISON STORAGE BATTERY COMPANY.

Orange, N. J.

*should work in this -  
ask 1/2 doz owners of Electrics who have  
had dead batteries or 1/2 doz who for  
some period have had Edison batteries  
to ascertain the truth of our statements  
we can give you a long list of  
users of both -*

## Summary

### A FEW REASONS WHY THE Edison BATTERY IS SUPERIOR TO THE LEAD.

#### Because it

Weights but 48% to 56% of lead,  
Occupies but 67% to 85% the space of lead,  
Has a vastly greater life than lead,  
Is more efficient than lead,  
Costs less to maintain than lead,  
Is much cheaper than lead, *costs a few cents a year*  
Contains no acid, and consequently there is  
No sulphation of plates,  
No corrosion of plates,  
No corrosion of terminals,  
No rotting away of trays,  
No corrosion of running gear.

#### Because there is

No buckling of plates,  
No growing of plates,  
No slopping of electrolyte,  
No loss of active material,  
No plate renewals,  
No sediment in jars,  
No cleaning out of jars,  
No breaking of jars,  
No lead cutting to do,  
No lead burning to do,  
No expensive repair bills,  
No breaking down of plates due to vibration,  
No loss of active material due to excessive overcharge.

#### Because of

*Extremely small loss in capacity while standing idle,*  
*No injury to cell if left discharged,*  
No injury due to excessive overcharge.

#### Because it

Grows in capacity immediately it is put into service,  
Is easy to keep it supplied with water by means of convenient filling  
apparatus.

#### Because

Vibration does it no harm.

## ADVANTAGES OF MOTOR OVER

### FAMILY HORSE-VEHICLE.

#### ECONOMY.

#### IN MONEY:

1. Cost - spread over term of years, is less.
2. Maintenance: Considering amount of work done the repairs or maintenance is less.
3. Labor: Requires less labor to care for, or groom.
4. Attention: Requires none on days of rest.
5. Space: Less space occupied in valuable city realty - consequently lower rental charge.
6. Service: Does more work than several horses.
7. Fuel: Consumes none while idle.

#### IN TIME:

1. Makes much greater mileage in a given time.
2. Can work twenty ~~hours~~ a day if necessary.
3. Requires no days of rest.
4. Easily handled in congested traffic, at good speed.
5. Can be stabled where horses are not permitted.
6. Always ready; no delay in getting away.
7. Will pull despite weather or road conditions.
8. Permits larger radius of travel than with horses.

#### IN SPACE:

1. In stable.
2. In street.

#### OTHER ADVANTAGES:

1. Less damage to roads.
2. Dirt, dust and manure would disappear.
3. Permits the accurate and easy determination of costs.

## ADVANTAGES OF ELECTRIC OVER

### GASOLINE VEHICLES.

#### 1.

#### ECONOMY.

##### IN MONEY:

1. Power: Lower cost of power, and less loss of power.
2. Repairs: Greater simplicity, hence fewer repairs.
3. Durability: More durable than reciprocal type.
4. No elaborate repair tools needed.
5. Attention: Much less than with gasoline.
6. Insurance: Lower insurance rates and freedom from limitations.
7. Chauffeur: No expensive experienced chauffeur required.

##### IN TIME:

1. Starting: No cranking, instant starting.
2. Readiness: Always ready.
3. Adjustments: There are none that the driver need make.
4. Repairs: Less time in repair shop.
5. Delays on road: Eliminated in properly inspected electric vehicle.

#### 11.

#### OTHER ADVANTAGES.

1. Simplicity of construction and operation.
2. Power: Electric power universal.
3. Danger: No danger from fire or explosion.
4. Control: Complete at all times.
5. Safety: To both operator and the public.
6. No freezing: No cracked cylinders.
7. No tanks to leak.
8. Electric vehicles permitted where no gasoline allowed.
9. Gasoline engine contains over 100 reciprocating parts. In course of time it shakes itself to pieces. The electric motor has one moving part, rotating, hence absence of vibration and deterioration.

#### 111.

#### ADDITIONAL REASONS.

1. No noise.
2. No odor.
3. No smoke.
4. No gears to shift; no clutch to throw.
5. No carburettor to get out of order.
6. No ignition nor timing troubles.

In a letter to the Edison Storage Battery Co., dated March 14th, 1911, a manufacturer of automobiles says:

"We know that all the lead battery cars we put out made trouble. Practically every one of them had new batteries within or at the end of the first year. Almost every one went to excessive expense getting or trying to get expert battery service.

"We have had the Edison battery in our cars for eighteen or twenty months and no customer has been to any expense on any battery whatever except for solution renewal. The first expense of battery repairs occurred yesterday, when a terminal post was twisted off in our shop under the writer's eye."

We have had our say.

The man who pays out his good money -  
the buyer - has also something to say;

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The foregoing is what we have to say about  
the Edison Storage Battery.

Now let the buyer, - the man who has paid  
out his good money, - say something;



New Haven, Conn., August 8th, 1911.

Cowles Tolman, President,  
Holcomb Company,  
New Haven, Conn.

Dear Sir:-

In answer to your inquiry concerning the new Edison battery which I am now using, would say I find them very satisfactory, requiring comparatively little care, and giving unusual mileage after charging. Mr. Edison surely deserves much credit for the success which he has attained.

Very respectfully,

(Dr.) A. E. Winchell.

Commonwealth Edison Co.,

Chicago, Ill., August 10, 1911.

Edison Storage Battery Company,  
Mr. C. B. Frayer,  
1336 Peoples Gas Bldg.,  
Chicago, Ill.

Dear Sir:-

Replying to your letter of July 18th.

We began using Edison batteries in December, 1909 in two of our Electric Rigs. One rig averaged about 45 miles per day and the other two about 30 miles per day. We are using now fourteen Edison batteries. We have very little trouble with them, in fact we are well pleased with the service they are giving.

Yours truly,

(signed) C. F. Clark,

Superintendent of Transportation

CFC/P

[Note - These batteries are in heavy trucks]

J. G. WHITE & COMPANY  
43 Exchange Place.  
New York City.

August 29th, 1911.

Mr. H. G. Thompson,  
Manager of R.R. Dept.,  
Edison Storage Battery Co.,  
Orange, N. J.

My Dear Mr. Thompson:-

The battery has been a great source of comfort in my boat this summer and as the time is now rapidly approaching when we must leave the lake region and lay up the boat, I am wondering what to do with the battery through the winter. As I have no place where there is not danger from freezing I wonder if I can ship it back to your company at Orange, have you clean it out and next summer filling and recharging and shipping when the time occurs. I would expect to pay for the service and it is about the only way I can see out of the dilemma.

Awaiting your reply with interest, I remain,

Yours very truly,

L. R. Pomeroy.

*Get results of the winter & less summer*

Lima, Ohio, September 4th, 1911.

Edison Storage Battery Co.,  
Orange, N. J.

Dear Sirs:-

I have 54 cells of your A-4 type battery in a Waverly Electric coupe. I have used this vehicle since October 1910, running about 1200 miles. The battery has given splendid satisfaction, and after using oxide batteries for ten years, I can say that your battery is way ahead of any other. I would like to know if the electrolyte in this battery should be renewed this Fall, and at what rate you will supply same. I also want your opinion on my charging apparatus. I would greatly appreciate your advice on this matter, as I feel this battery is of unusual efficiency if properly handled. If you consider that my cells need new electrolyte, please ship the necessary amount to my address, and send bill for same.

Yours very truly,

J. C. Linneman.

44 Munn Avenue, East Orange, N. J.

March 24th, 1911.

Edison Storage Battery Co.,  
Orange, New Jersey.

Gentlemen:-

I have driven various electric cars in the aggregate, over thirty thousand miles. For the past two years I have used Edison batteries exclusively. I do not hesitate to say that rather than go back to the heavy, cumbersome type of lead battery, with its constant depreciation and heavy expense for upkeep, I would prefer to abandon the use of the electric car altogether.

My Bailey Car, with the Edison battery, is the best I have ever had and gives me the greatest satisfaction.

Yours sincerely,

Lerrin T. Scarritt.

Kansas City, Mo., March 29th, 1911

Mr. J. G. Kirsten,  
#3501 Main Street,  
Kansas City, Mo.

Dear Sir:-

It will interest you to know that my Detroit Electric Car was stored on November 25th with a partial charge of electricity and the car was not used again until March 14th, when with only an additional charge of one hour and a half I ran the car twenty-five miles before turning it over to your driver to be taken to your garage for inspection. Taking the car to your garage increased the mileage to 51 miles.

The car during the period of its idleness of more than three and one half months stood in our garage wholly without heat, within which time, as you know, we had below zero weather several times.

These facts seem to verify the claims made for the Edison Battery at least as to its proof against injury by freezing weather and that the batteries do not become exhausted by leakage or injured by standing without recharging.

I have had my Detroit Electric since last May, and have had no reason to complain, on the contrary, I am more than pleased with it.

Yours very truly,

Mrs. U. S. Epperson.

San Francisco, Calif., Mar. 1, 1911

Nestor Electric Vehicle Co.,  
137 Hayes St.,  
City.

Gentlemen:-

I take this opportunity of expressing my entire satisfaction with the workings, mileage, and general behavior of the Bailey Electric Victoria Phaeton, equipped with the new Edison storage battery, which I purchased from you some-time ago.

Will state that the up-keep is surprisingly low for the mileage obtained in climbing the steep hills in and about San Francisco. For instance, one hill had a  $24\frac{1}{2}\%$  grade which my Bailey Electric climbed with ease.

I have no hesitancy in recommending this car to anyone desirous of purchasing a first-class electric vehicle.

Yours very truly,

C. Carpy.

Extracts from letters from G. W. Holden regarding 40 cell A-4 Edison Battery used in Bailey Electric Victoria Phaeton #106.

April 12, 1911 to Herreshoff Mfg. Co., Bristol, R. I.

"The performance of the Bailey in the short run (report attached) showed that our claims are substantial and conservative - the car actually had  $\frac{1}{2}$  volt higher reading at the end of run than at the start, and undoubtedly had a good long run left in it - this after six months of absolute idleness."

April 20, 1911 to S. R. Bailey & Co., Amesbury, Mass.

"This carriage was charged last on October 18th and had stood in cold house all winter (nearly six months) when at the request of the old gentleman it was brought out the day I called and I took a short run with the result as per attached record. The voltage was  $\frac{1}{2}$  volt higher when we finished than when we started, and for the equipment installed (40 - A-4) its action was snappy and had a lot of come back to it. This certainly proves that our claims for Edison Battery are conservative."



Bristol, R. I.  
April 10, 1911.

Report on Short Run & Condition  
Edison Battery in Bailey Electric #106

Equipment 40 A-4 Edison cells - 48 volt G. E. motor - 2 Passengers  
Battery had not been charged for about six months, Oct. 18, 1910.  
Roads very muddy - hard going.

Open circuit, Battery reading at start - 52 volts.

|           |      |        |      |       |            |                    |
|-----------|------|--------|------|-------|------------|--------------------|
| 2nd Speed | - 44 | volts  | - 30 | amps. | - Bad road |                    |
| "         | "    | - 45.5 | "    | - 22  | "          | - Fair "           |
| "         | "    | - 46.5 | "    | - 18  | "          | - Good "           |
| "         | "    | - 45   | "    | - 36  | "          | - Bad " Up hill    |
| "         | "    | - 45   | "    | - 30  | "          | - Bad " Level      |
| "         | "    | - 43   | "    | - 40  | "          | - Up Hill          |
| 3rd       | "    | - 41   | "    | - 42  | "          | - Up Hill          |
| 2nd       | "    | - 45   | "    | - 24  | "          | - Level - Bad road |
| "         | "    | - 47   | "    | - 17  | "          | - Good road        |
| "         | "    | - 47.5 | "    | - 16  | "          | - " "              |
| "         | "    | - 41   | "    | - 40  | "          | - Up Hill          |

Open Circuit reading immediately after car stopped 52.5 volts

Mount Carmel, Pa., June 20th, 1911

S. R. Bailey & Co.,  
Amesbury, Mass.

Dear Sirs:-

I have run a Bailey Victoria with Edison battery for a year over our very hilly country and have had no trouble covering 70 to 75 miles on a single charge, a total of over two thousand miles. You know the condition of our mud roads.

I am satisfied and pleased with the result.

Yours truly,

(signed) M. K. Watkins.

NOTE: - Mount Carmel, Pa., where Mr. Watkins' car is operated, is in the anthracite region in the heart of the mountains and his favorite run includes a 30 minute climb of one grade on the mountain where the car draws 80 to above 100 amperes at 60 volts continuously. This A-4 battery used has a normal discharge rate of 30 amperes through a 28 ampere 60 volt motor. There are no fine roads in the vicinity.

E. W. M. B.

St. Paul, Minn., June 21st, 1911.

Mr. W. C. Bee,  
Edison Storage Battery Co.,  
Orange, N.J.

Dear Sir:-

Battery doing better than I expected. The Baker Roadster with 60 A-6 cells gave me on the first charge 112 miles with power to spare. It is a good "ad" for your batteries. Would like to see you up here.

Yours truly,

M. B. Carpenter.

JW

June 23rd, 1911

Mr. D. H. Clark,  
Bell & Company,  
Orangeburg, N. Y.

Dear Mr. Clark:-

I have your letter of June 23rd inquiring about the Edison Storage Battery and it gives me great pleasure to be able to say that I have found it entirely satisfactory.

I think it is a wonderful battery, far ahead of anything that has ever been produced and I have it from Mr. Edison himself that it should last a lifetime. My plant has now been installed about a year and the batteries do not show the slightest sign of deterioration; in fact it has not been necessary to change the electrolyte solution. The Batteries take up a small corner of my power house on a shelf about 40" square. In order to install the lead Batteries I would have been obliged to build an addition to my garage with elaborate shelves and passage ways designed for the constant care of the battery.

I left my summer home about the first of January and returned about the 9th of June. During that time I had my caretaker put distilled water in the batteries two or three times, but aside from that they did not have the slightest attention. When I returned the batteries registered ninety volts out of the original 110. The Battery will stand a great deal of abuse which would finish a lead battery. My experience with the lead batteries I have used on automobiles has been that after a few months' use I have to throw them away and buy new ones.

Yours very truly,

Edw. V. Hartford.

Amesbury, Mass., June 26, 1911.

Mr. W. G. Bee,  
Edison Storage Battery Co.,  
Orange, N. J.

Dear Sir:-

I enclose copy of a letter from Mr. Watkins, who has given the battery what we consider the hardest use of any of our customers. This A-4 battery probably doesn't run ten minutes without going into double its normal discharge rate.

Mrs. M. M. Johnson, Hallowell, Me., has had a Bailey Phaeton about a month with a 54 A-4 battery and reports climbing a hill that has "never been climbed by any gasoline car." She also reports getting 90 miles on one charge. The combination of poor roads and steep grades in that vicinity is certainly the worst that I have ever motored over. Our estimate of mileage before selling the car was 75 miles.

Yours very truly,

S. R. BAILEY & COMPANY, Inc.  
E. W. M. Bailey, Treas.

Kansas City, Mo., June 26, 1911.

Mr. C. B. Frayer,  
1336 Peoples Gas Bldg.,  
Chicago, Ill.

Dear Sir:-

We enclose under separate cover photograph of one of our new Detroit cars which was in a wreck last Wednesday. The car hit a telephone pole and a tree, one after the other, going about fifteen miles an hour down hill, the owner having lost control of it, and threw it into the curb and up into the tree.

We are sending you this photograph which shows the Edison Battery very clearly, and the marvelous part of the accident was that not a single battery connection was broken, and that the car was run in three miles from town to our garage under its own power. Outside of a little wobble in the right rear wheel not a thing is wrong with the chassis.

The combination of the Detroit Electric and the Edison Battery has certainly shown up wonderfully in this terrible accident. It would be rather hard to determine which is entitled to the most credit, the car or the battery, but we certainly have great cause for congratulation from the fact that this car had an Edison Battery in it, because if we had had the lead sulphuric acid battery the occupants of the car would have been badly burned in addition to their present serious injuries. They are, however, recovering rapidly, and have ordered a new Detroit Electric with Edison Battery, which we will deliver to them tomorrow.

ANDERSON ELECTRIC CAR CO.

J. G. Kirsten,  
Kansas City Manager.

Chicago, Ill., July 13th, 1911.

Edison Storage Battery Co.,  
Orange, N.J.

Gentlemen:-

Answering your letter asking whether the storage batteries which I purchased with a Detroit machine in April, 1910, are giving satisfaction, I take pleasure in stating that there has been no trouble of any nature with the batteries. The machine has been in use, not only during moderate weather, but also during the winter, and at no time was there the slightest difficulty in operation. The equipment seems to me to be ideal for the purpose.

The automobile has been used by my family in and about Chicago, having made approximately 6000 miles, has been stored in a public garage when not in use, and the batteries have received about as much attention as if they did not exist, except charging and filling by the garage people. There have been no repairs.

Very truly yours,

Geo. Kleins.

Milwaukee, Wis., July 19, 1911.

Mr. C. B. Prayer,  
Chicago, Ill.

Dear Sir:-

I am more than pleased to tell you that I am just as pleased at the service I have gotten out of my Edison batteries as the day I purchased them. They have been in use every day without an exception up to the present time, since Sept. 7th, 1910, without one cent of repairs to me in any way. I have covered up to the present time 3889 miles with my little car, have never run out of power, and I think this remarkable owing to the fact that I have the small size battery. Then too the Edison battery requires very little attention and, still better, it is indestructible owing to the fact that when one's car needs repainting or overhauling, the batteries can be taken out and no damage is done them by so doing.

Yours very truly,

(Miss) L. Myers.



The following is an abstract from a letter received from Mr. F. M. Compton, Davies Bldg., Dayton, Ohio.

"I have found the filling trouble pictured so strongly to me in advance of the purchase of this battery by lead battery people, to be a mere bug-a-boo, so far as my experience goes with charging for short periods, say from two to four hours. I do not see that it requires any more filling than the Exide lead battery which works with it, side by side. If you have any inquiries as to the practical experience along this line, I shall be pleased to answer anyone on the point. I am also prepared to discount the claims made by some of the competitors that the battery will not carry up-hill. This battery will run up a long hill faster than the Exide battery which I now have. The Exide battery is nearly new and in first-class condition."

THE LOOKOUT MOUNTAIN RAILWAY COMPANY  
-Incorporated -

Suite 511-512 Continental Bldg..

Denver, Colo., July 26, 1911.

My Dear Mr. Frayer:-

Replying to yours of July 17th, I beg to say that I am greatly pleased with the Edison Battery I purchased of your people eighteen months ago. It is twice as good to-day as the day I purchased it, and this is something of a satisfaction to a man who has been laying out something like two or three hundred dollars every spring for a new lead battery. I use the rotary converter in charging it and have run my car about 7,000 miles during the past eighteen months. While in Florida last winter, I left it charged and standing in my garage without fire in freezing weather and it stood there for four months without any attention. When I came home in April I took the car out and ran it around town for three or four days before putting it on charge.

So far as I am able to discover, it is absolutely fool-proof. I have charged it at the rate of 45 ampere hours and have many times pushed the current in at the rate of 125 ampere hours for two hours at a time to get enough to run me 70 or 80 miles.

As a hill-climbing proposition, I don't believe any electric car is a success, but I use my car for all the foot-hill jaunts and last Sunday ran it 106 miles and reached an elevation of nearly 2000 feet. I happened to be in a mood to enjoy slow riding that is all there is to it, but the battery took me there and got me home, and I don't believe there are three lead batteries in the nation that could have duplicated the trip I made.

I have the battery in a Detroit run-about chassis that weighs, battery and all, about 2000 lbs., use 4 X 32 Palmer Web tires, and last year my total expenses did not exceed \$20.00 per month for juice, care, repairs, tires, etc. - a record that I will put against anything I have heard of up to the present time.

I have worn out a half dozen gas cars hitting the high places in California, when I had automobiles bad. I have settled down now to a real comfortable machine, and I wouldn't trade my Detroit run-about with an Edison battery for the best machine ever built. From this you may gather that I have struck an easy, quiet gait and enjoy a machine that doesn't call for chauffeurs, cranking, greasy hands and all that

(2)

sort of thing. When I want to hit the high places I subsidize a friend of mine to undertake the job at \$5.00, an hour and that fills the bill, and for the time being I am running a free bus at a minimum of expense.

Hoping this will cover the questions you ask, and trusting that you will continue to prosper, I beg to remain,

Yours very truly,

HERBERT GEORGE

Mr. C. B. Frayer,  
1336 Peoples Gas Bldg.,  
Chicago, Ill.

THE LOOKOUT MOUNTAIN RAILWAY COMPANY  
- Incorporated -

Suite 511-512 Continental Bldg.

Denver, Colo., July 26, 1911.

My Dear Mr. Frayer:-

Last winter I put in three months in Florida. If I wished once for my machine, I did a dozen times. It is an ideal place to sell machines. The past month I have been over in Utah, and you do not know how I have missed my little red machine. It seems strange the Detroit people haven't some of your batteries at work in that town. It is an ideal town for electric and if I were to ship my car over there and give a few days' demonstration, I believe I could sell you a dozen batteries. The last mileage we got out of the battery was 154 miles and I consider as a proposition for demonstrating purposes that my battery ought to be worth \$1500. today instead of \$800., the price I paid a year and a half ago.

You might incorporate this item in the letter I herewith enclose you.

I shall be in Utah from August 10th to August 25th. If you have any connections out there, sic them on to me. I stop at the Hotel Utah, and anybody will point me out to your friends in Salt Lake City, from the nice clean, white-necked girls with peachy cheeks to the old elders with lambrequin curtains on their chins that float out on the waters of the Great Salt Lake.

I would be glad to hear from you in the meantime here in Denver.

Yours very truly,

H. George.

Mr. C. B. Frayer,  
1336 People Gas Bldg.,  
Chicago, Ill.

W. H. VAN STRANDER, M. D.  
61 Church Street,

Hartford, Conn., Sept. 7, 1911

The Holcomb Company,  
105 Goffe Street,  
New Haven, Conn.

Gentlemen:-

You desire to know what I think of the new  
Edison battery, and what success I have had.  
Have only had the battery about three months and ran  
about one thousand miles.  
To date it has been absolutely satisfactory. It gives no  
trouble and anyone without the least experience with batter-  
ies can take care of it. Give it water and electricity  
and that is all that is necessary.

Yours truly,

W. H. Van Strander.

HOLLY LUMBER COMPANY

New Haven, Conn., Sept. 7, 1911.

The Holcomb Company,

New Haven, Conn.

Gentlemen:-

Referring to the new Edison Batteries which you furnished me in the Detroit Electric car purchased of you early last spring, the same have proved to be very satisfactory. I have driven the car back and forth all summer to my shore cottage, 11 miles from New Haven over the Branford Hills, which are among the longest steep hills in this vicinity and the batteries have done the work splendidly. I am satisfied that they are by far the best batteries in the market for an electric pleasure vehicle.

Yours very truly,

E. A. Beckley.

C O P Y

FARMINGTON SAVINGS BANK,  
FARMINGTON, CONN.

Mr. Cowles Tolman,  
Pres. Holcomb Co.,  
New Haven, Conn.

Dear Sir:-

You ask me to write you what I think of the new Edison Battery I am using in my Detroit Electric. In answer I will say I am very much pleased with the workings of this battery and the car. They give entire satisfaction. With the experience I have had with the Edison battery, I am lead to believe it will do all that is claimed for it.

Yours very truly,  
H. W. Barbour.

~~(copy)~~  
Extracts from letters of *elder John A. Fisher*

Nashua, N. H., Oct. 23rd, 1911.

Mr. W. G. Bee, Edison Storage Battery Co

Dear Sir:-

Relay & Blue Print received, and is all connected with new dry cells, and as requested will mention your bill number 10394. Thank you very much for your kindness.

I have had your batteries 64 cells A-4 now 18 months, and will say they seem better this Summer than they did a year ago, even then I could go 90 miles one charge, and the auto with me in weighed 3000 lbs. I think they now are forming up, why so late in forming, probably on account of my not using it oftener. I do not use it in cold weather or in July and August, as those months I take my vacations.

I have only run little over 2000 miles in the 18 months, I like the batteries very much.

If not too much trouble I would be much pleased if you would answer the following questions, as probably before long I will be obliged to refill with new solution, at the present time they seem all right.

Can I tell by the voltage on meter in the auto when charging up if solution is weak? Now when charged up it shows 118 to 120, which is a trifle more than 1.8 volts per cell, will it show if solution is weakless or shall I wait till it shows plain in the running of auto.

When putting in new solution, does it make any difference whether the cells are discharged or not? Do I disconnect all cells at once, or one at a time.

Yours very truly,

(Signed) John A. Fisher.

227 Main Street.



**Edison General File Series**  
**1911. Battery, Storage - Federal Storage Battery Car Company**  
**(E-11-19)**

This folder contains correspondence and other documents relating to the design, manufacture, and commercial promotion of battery-powered streetcars produced by the Federal Storage Battery Car Co. Included is discussion of Edison's purchase of property in Silver Lake, New Jersey, on behalf of the company, along with references to their problems with Miller Reese Hutchison's Klaxon horn. Among the correspondents are Ralph H. Beach, president of the company; William G. Bee, sales manager of the Edison Storage Battery Co.; and Frank L. Dyer, vice president and general counsel of the Edison Storage Battery Co. Other correspondents include W. Douglas Lysnar, mayor of Gisborne, New Zealand; F. S. Spence of the Toronto Board of Control; and William W. and Lucien Wheatly, sales representatives in Chicago.

Approximately 90 percent of the documents have been selected. The items not selected consist primarily of letters of transmittal, memoranda regarding billing procedures, and circular letters.

Bostoy Beach

**FEDERAL STORAGE BATTERY CAR COMPANY**

MANUFACTURERS OF  
**BEACH CARS**

EQUIPPED WITH  
**EDISON STORAGE BATTERIES**

1775 HUDSON TERMINAL  
80 CHURCH STREET  
PHONE 3282 CORTLANDT  
NEW YORK CITY

Jan. 3, 1911.

Am 1/6/11

Mr. Thomas A. Edison,  
Edison Storage Battery Co.,  
ORANGE, N.J.

Dear Mr. Edison:

The attached clipping is from the Evening Telegram and I think I can see in this a good opportunity to advertise for the car, and in a way that will be effective and dignified.

From this article it would appear that you are the inventor of the car. You have to father many things, and fancy you do not want to be burdened with this one, and as your fame rests upon the foundation of the real merit of having done things, you can add to that already great name the merit of generosity, and at the same time keep people talking about the car.

If you could write me a letter like the enclosed which I could have published it would help I think very materially in selling cars. If you see no objection to writing this letter, kindly write it in your own handwriting and mail it to me, making of course any changes which you think should be made.

Yours truly,

B/MB  
Enc.

*W. H. Beach*

*Beach - I don't write under my own name for newspaper but if you deserve these cars the Edison Co. should advertise them. I will do so. I see any connection with that they understand.*

[ATTACHMENT/ENCLOSURE]

Jan. 3, 1911.

Mr. R. H. Beach,  
50 Church Street,  
NEW YORK CITY.

Dear Mr. Beach:

I saw in the Evening Telegram of January 2nd a statement that I am the inventor of the storage battery car. In order that the erroneous impression may be corrected, and to give honor to whom it is due I desire to say that I am the inventor of the storage battery that bears my name, also that you are the inventor of the street car that is driven successfully when equipped with this battery; that when you, at my request, undertook the improvement in the methods of car construction it was not possible, commercially, to drive a street car with a storage battery. By reason of the careful and intelligent work you have done, the structure of the car has been so improved by you as to not only permit the battery to drive it, but to make this method of driving cars the most economical one known.

Yours truly,

THE  
**SS OF THE  
 ONDERFUL**



Edison Leads the World in Scientific Attainments Because of New Storage Battery.

**DICTOGRAPH RECORDS AND  
 REPEATS CONVERSATION**

Dr. Flexner and Dr. Ehrlich, Who Discovered Dioxylaminoarsenobenzol, Lead Medical Research.

The name of Thomas A. Edison stands first in the field of scientific research for the past year, his invention, after years of experimenting, of the successful storage battery street car, having practically revolutionized the construction of street railways, eliminating the most expensive items of construction and operation, the underground conduit and the overhead trolley wire, with the costly power plant necessary to supply current. Mr. Edison has succeeded in producing a car, operated by storage batteries, which needs nothing more in the way of equipment than a set of tracks to run on and a comparatively inexpensive charging plant, and which costs less to operate than the old horse car. His invention is already in use on the Twenty-ninth and Twenty-ninth Street crestown line.

Another wonderful invention, now in use in the Police Headquarters and other places, is the dictograph, a machine which takes up records all the conversation which takes place in a room and reproduces it faithfully elsewhere.

A microphone attachment to the telephone, invented by Dr. Thaddeus of Astor, of France, which by means of drum cables of the voice two and one-half octaves, has been tested and has conveyed the human voice 155 miles over the ordinary telephone wires.

An illuminating gas, invented by a German named Illus, from the residue of petroleum, after the by-products have been taken from it, is sold in portable tanks, enabling the consumer to carry supplies for his lighting and cooking plant home with him.

A walking wharf, which by means of eight legs, each operated by a separate power plant, can move over the bottom of the ocean and can be used to construct all kinds of marine structural work, unimpeded by wind and tide, has been successfully tested and is in use both in this country and abroad.

The wireless stations at Glace Bay, Nova Scotia, and at Cúitán, Ireland, are in steady communication with each other and maintain a regular transatlantic service. Wireless telegraphy has been used with great success from aeroplanes and dirigibles.

A wireless compass equipment, by means of which approaching steamships can tell each other's exact position, has been invented. Petroleum as a fuel has proved its capabilities and is being used with great success in both the British and American navies.

The White Star line has launched a 45,000-ton steamer, the Olympic, which is 83 feet longer and has 1,100 tons greater displacement than any other ship now afloat. She will carry a crew of 550 men, and has accommodations for 2,500 passengers.

In the field of medicine Dr. Simon Flexner, head of the Rockefeller Institute for Medical Research—who has discovered a serum with which the dread disease of cerebral-spinal meningitis has been successfully combated—and Dr. Paul Ehrlich, director of the Imperial Institute for Experimental Therapeutics, in Frankfurt, Germany—who has given to the world dioxylaminoarsenobenzol, a remedy hailed by physicians all over the world as a savior for diseases of the blood—stand first.

An aortic stethoscope, by means of which the beats of the human heart are magnified in sound sixty times, and can be heard distinctly over the telephone, away from the patient, is an invention of the past year. An Englishman, Mr. E. G. Brown, is the inventor of this instrument.

A German physician, Dr. Kroyanow, has invented a lamp which is a modification of the X-ray, and which has developed great curative power.

It has been discovered that heat, gently applied to persons whose vitality has been lowered by shock from burns, stimulates their recuperative powers.

**PERSONS W**

**EDISON STORAGE BATTERY CO.  
FEDERAL STORAGE BATTERY CAR CO.**

417 McCormick Building - 193 Michigan Avenue

**CHICAGO**

William Walter Wheatly  
Lucien Wheatly

Telephone  
Harrison 70

January 23, 1911.

PERSONAL.

Mr. Thomas A. Edison,

Orange, New Jersey.

My dear Mr. Edison:

On December 27th, 1910, we wrote you, enclosing copy of our letter of same date to Mr. Beach, calling attention to our changed relationship toward Mr. Beach and his car. We do not seem to be able to find any basis upon which we can do business with Mr. Beach at a profit, and we certainly cannot attempt it upon any other basis. On January 4th, before you had time to make a formal reply to our letter of December 27th, we called upon you personally and talked with you concerning the matter of starting in the business of manufacturing and selling storage battery cars, upon an independent basis. You will doubtless recall the assurance you gave us at that time, by which we were encouraged to consider the matter seriously.

We have just received from Mr. Beach some correspondence dated January 19th, copy enclosed, from which you will make note of the very limited way in which he proposes to handle the proposition. We had been assured that Mr. Beach was prepared to handle it in a large way, but it seems not. Our eastern friends in the railway field are now telling us that Mr. Beach has lost, or is fast losing, his golden opportunity. They say that some months ago he had the opportunity of a life time to introduce the storage battery cars, but had let the opportunity slip by. You may determine in your own way whether it is well founded.

In his letter of the 19th instant, Mr. Beach says, "We do not want to send any demonstration cars anywhere. We have three cars out now on demonstration and that is enough". We assume that the three cars referred to are the ones placed on the New York Crosstown, the Washington, Spa Springs & Greta, and the West Orange Branch of the Erie Road. If there are any others, we do not know of them.

*Copy = I think you  
Y + Beach should  
get together & decide  
something*

T A E -2-

Concerning the New York and Washington experiments, we are informed they have both been taken off and may not be returned to service. This information was given us by a prospective customer, a prominent railroad President, who was sufficiently interested to look into the matter. It is useless for us to explain to this gentleman and others that there are extenuating circumstances. They see only the fact that the cars were tried and finally thrown out; and in one case Gould Storage Battery cars substituted. Their conclusions are not favorable to the Beach Car, and we fear the Edison Battery has suffered in their estimation.

We have a great deal of prospective business in the Central West, but it now seems to us almost certain that Mr. Beach will be unable to secure it, as he refuses to send demonstration cars here. Furthermore, he seems unwilling to build such cars as the railroads require. See the correspondence with Mr. E. H. Conrades, President East St. Louis, Columbia & Waterloo Railway, who is ready to place an order for five cars and Mr. Beach is dodging it.

Positively, we will not purchase demonstration cars from Mr. Beach's Company, and assume the additional burden of his failures to make successful demonstrations in the East. We are, however, prepared to build our own demonstration cars without infringing any of the rights of Mr. Beach and his associates. Our plans are rapidly taking shape, and we must now know definitely where we stand with reference to the Edison Storage Battery.

We propose to become associated with a prominent car building establishment in the manufacture and sale of very light cars. To be able to conclude our arrangement successfully, we need your assurance that we may have the regular manufacturer's discount, twenty per cent, on your batteries. If you are now prepared to conclude with us such an arrangement, and give us the same consideration and protection you have given and are still giving to Mr. Beach and his associates, we are prepared to go ahead. We do not wish to intervene between you and Mr. Beach in any arrangement you may have made with him.

We also wish to be understood that we do not desire to do anything to injure Mr. Beach and his associates in recovering the money which they have already invested. On the contrary, it is our purpose to give

T A E -3-

them all the assistance in our power to sell the cars they have already built. We have also spent a lot of money which we would like to get back from the sale of these cars. Evidently, they do not intend to extend their investment unless they sell the cars on hand, and even then will only proceed in a very limited way. It now looks as if it might be some time before they are able to secure any bona-fide orders. In the meantime, we cannot afford to remain idle, and you cannot afford to limit the sale of your batteries by restricting their use to cars which no-one seems willing to buy. If the cars were being successfully demonstrated and sold in large numbers, the situation would be quite different.

We therefore place the matter in your hands, and ask for a reply at your early convenience.

Yours very sincerely,

WWW-L

*W.W. Wrenthly*

[ATTACHMENT/ENCLOSURE]

C O P Y.

January 3, 1911.

Mr. R. H. Beach,  
Pbes., Federal Storage Battery Co.,  
50 Church St., New York.

Dear Sir:

Referring to Mr. Wheatly's letter of the 29th inst. I acknowledge receipt of check for \$329.00, and tender an apology for the oversight in not acknowledging before.

As to Mr. Beach's letter of the 15th inst., relative to details of car, have refrained from answering until Mr. Lichter could be consulted on some of the points.

It is our present plan to figure on the construction of five passenger cars for the first order. In the partition dividing the smoking compartment from the balance of the car, a door will be necessary, and we very much prefer a sliding door to a swinging one, as experience has shown that the swinging door is not only very inconvenient, but delays the loading and unloading of passengers.

It is almost imperative that we provide some cross seats, with reversible backs, in the main portion of the car to provide for passengers taking the long rides. This, we understand from Mr. Lichter, will require some change in your general plan of car construction, as well as arrangement of batteries. Can not the inner trusses of your car be planned to lay below the floor of the car where the side seats are arranged something on the line of pencil sketch attached? If so, why not arrange to carry a portion of the batteries in box arrangement under the center of the car and thereby increase the number of batteries and by so doing increase the cars' efficiency?



[ATTACHMENT/ENCLOSURE]

-2-

There is nothing to prevent the use of a car eight feet, six inches wide extreme outside measurement, and no doubt this will assist materially in the design of the car and simplify the heating arrangements.

There is no doubt about the correctness of your statement, that a car with wide seats will provide more standing room, and that is all very well for short runs, but we must provide some comfort for those making the longer rides.

Mr. Lichter is very much opposed to chain gear and urges strongly that spur gearing be used, and for that reason will ask you to figure on this gear for our cars. He does not insist on the General Electric Contoller, and if you have one that you are prepared to vouch for as being better than the General Electric, you are welcome to use it.

The question of operating with two main controllers, or one main and two master controllers is up to you to decide as you think best.

The Cooper Heater is agreeable to us, as is also the Klaxon Whistle.

When we first took up this matter, our Chief Engineer, Mr. Brown forwarded a complete map and profile of our line, and also gave you full information as to stops, etc., so you will no doubt find all the information of this character you desire in your files. If they have become mislaid, kindly advise and we will replace them.

Yours truly,

(E. H. Conrades)  
President.

[ATTACHMENT/ENCLOSURE]

C O P Y.

Jan. 12, 1911.

East St. Louis, Columbia & Waterloo Ry.,  
Mr. Edwin H. Conrades, Pres.,  
Room 610 Merchants Laeole Bldg.,  
ST. LOUIS, MO.

Dear Sir:

Your esteemed favor of January 3rd was duly received. Mr. Wheatly came to New York the day after the receipt of your letter, and returned to Chicago the following day. While he was here I promised him to come To St. Louis to take up personally with you the matter of building the cars you desire, and to make such modifications in our design as will meet with your approval. I find, however, owing to deferred appointments with some of the engineers of the Public Service Commission here, that I cannot get away as expected. I can call on you during the coming week, but it has occurred to me that if you can spare the time to come here it would be much better for you. My reason for suggesting this is: You are seriously considering the use of these cars; this means the expenditure by you of a very large sum of money, not only in the cars, and it is important to you not to make any mistakes in anything, and as this method of car propulsion is new, it behooves you, as well as us, to be especially careful in venturing into unknown fields.

Very naturally, we are anxious to sell you the cars, but we do not want to sell you a car that we have the least doubt will not meet your approval fully. Now, you have a report from your

[ATTACHMENT/ENCLOSURE]

ESTL&W. -2-

engineer, Mr. Lichter, which on the whole is favorable to this car. Mr. Lichter is an honest, conscientious man, and has told you what he really believes; there are, however, many things to be considered by you which Mr. Lichter has not touched upon, which we ought to go over very carefully before you decide whether you will or will not adopt this method of propulsion on your road, and these things you can best go over here.

I feel that the above remarks are of peculiar force at this time, because this method of car construction is new and for that reason should, by a prudent man which you no doubt are, be more carefully considered than would be necessary in an older form of the art; therefore, if it is possible for you to come here for a few days, two will do here, I think you would be better pleased in the end than you could possibly be by my coming there. If it is a question of expense, we will pay that.

In regard to the changes in the design you want, we can better take that up when we meet, but it is not out of place for us to say that we can furnish you a car body with part cross and part longitudinal seats if desired; it will of necessity be somewhat heavier than a car with all longitudinal seats. In case of cross seat arrangement we must place all batteries under the car. We can do this, but we try to hold to the plan of placing all batteries under the seats, which necessitates longitudinal seats, because by this arrangement we get the best possible distribution of weight, the least possible weight and the least cost. If, however, you prefer the other arrangement we will build the cars as you desire. On all other essential points, I think we are

[ATTACHMENT/ENCLOSURE]

ESTLOC&W -3-

agreed, except as to the use of the chain drive.

I note that you say that Mr. Lichter prefers a spur gear drive. I have respect for Mr. Lichter's opinion and will gladly yield to his desire in this respect, but we know that the chain is altogether to be preferred; it is much more economical as a power transmitter, so much so in fact that it is quite probable that a battery car could not be constructed that would be satisfactory with the gear drive; it might be possible, but we doubt it. The life of the chain is greater, it makes less noise, is more simple to install and maintain and more easily adapts itself to the use of the free wheel, and its advantages in coasting are very much greater than is possible with the gear. I am quite confident that if Mr. Lichter would give this question a more careful study than he perhaps has, he will come to our opinion. We will be glad to furnish him information on the subject as he may desire.

The car which Mr. Lichter saw while here is now in regular commercial service, carrying passengers, on the Erie Railroad. If you will come here and see for yourself what it can do, talk with the men who operate it, go over the question of the durability of the battery personally with Mr. Edison, see what kind of people you are dealing with and know by your own knowledge what has been accomplished in this very difficult art, I believe that you will adopt this method, but we do not want you to adopt it unless you really believe that it is the right thing for you. It truly is the best, but in order that we may make a success of your work we must have your whole-hearted cooperation.

[ATTACHMENT/ENCLOSURE]

ESTLC&W -4-

If you decide upon receipt of this letter to come here during the coming week, kindly telegram at our expense, and if you cannot do so, I will be glad to come to St. Louis and go over the matter with you.

Yours truly,

FEDERAL STORAGE BATTERY CAR COMPANY.

R. H. Beach,

President.

B/HB

[ATTACHMENT/ENCLOSURE]

C O P Y.

January 16, 1911.

Mr. R. H. Beach,  
President, Federal Storage Battery Car Co.,  
50 Church St., New York.

Dear Sir:

Your favor of the 12th instant has been read with much interest.

You are correct in assuming that I am conservative, and especially when considering a new proposition like yours. Furthermore, I am free to say, that I know little about mechanical matters in general and less about electricity. It was due to these considerations that Mr. Lichter was sent to New York, and knowing him to be of a decidedly conservative temperament, his report has given me considerable confidence in the storage battery, but at the same time it has impressed me with the belief that there are defects in your car when considered in connection with our enterprise.

For me to come to New York to discuss these details with you would be simply a waste of time and money, as I must rely on Mr. Lichter, or a man of his character, in whom I have confidence, for advice and guidance in this matter.

The original proposition made by Mr. Wheatly, to send one each of the large and small cars out here for working out on

[ATTACHMENT/ENCLOSURE]

RHB-2-

Mr. Haines lines still appeals to me as the most sensible proposition, and I am particularly disappointed as to the large car not being sent. I never gave the small car serious consideration, more than as a contrivance to demonstrate the working of the battery, I know that Mr. Haines feels the same way, and have no doubt there are many others who would avail themselves of the opportunity to study your car if one was sent into this territory.

I realize that the introduction of your car, when once established as being thoroughly practical, means a revolution in city and suburban transportation, and like all new innovations will no doubt meet with radical improvements to such an extent that the cars you have now constructed will be out of date in the near future. In fact, if I had the road built and equipped for trolley cars, my policy would be to sit back and let "the other fellow" do the experimenting.

For reasons previously stated, it is useless for me to discuss the mechanical details with you, and wish to assure you that I am not disposed to be stubborn, further than to follow the advice of those in whom I have confidence.

The question of having some cross seats in the car is due to the belief that for long distance riding, it is imperative to have them or drive away business. If you would send a car out here this objection might be found groundless.

Yours truly,

(E. H. Conrades,)

President.

[ATTACHMENT/ENCLOSURE]

Jan. 19, 1911.

Mr. Edw. H. Conrades,  
Prest.E.St.Louis, Col. Waterloo R.R.,  
St. Louis, Mo.

Dear Sir:

Your favor of the 16th received this morning and the contents have been carefully noted.

I judge from your letter that what you want at this moment is a car operated over your road or Mr. Haynes' road, in order that you may study its operation under the service conditions as they exist there. We did intend to send a single truck car to Mr. Haynes as a sample, but after more mature deliberation and consideration we decided not to do so, for this reason: a storage battery car cannot be operated continuously for 18 hours of the day. It is not commercially possible to place sufficient battery in the car to keep the car moving constantly during this long period of time.

The only process we know of to handle a battery car successfully is to charge the car at intervals of every 30 minutes to six hours, according to the speed and track conditions. The duration of the charge of course will vary. Supposing for example we should send you one car, and that the car is equipped with batteries to drive it 100 miles on single charge, and assuming the schedule speed of this car would be 20 miles per hour; manifestly the battery would be exhausted in five hours. Supposing you started the car at 6 A.M., it would be out of current at 11 o'clock in the morning, the car would be standing in the barn out of service, and as the battery would be completely exhausted, or nearly so, the car would have to stand for seven hours. The result is that you would only get four or five hours service out of the cars, from 6 till 11 o'clock in the morning, or only during day-light hours. Now on the other hand if you had five cars, you could so arrange your schedules as to keep four of the cars constantly moving. This you would be able to do by alternating the cars somewhat after the following fashion:

Supposing you start out at six o'clock in the morning with five cars, and run all of them we will say for two hours which would enable you to handle your morning "rush hour business". At the end of two hours commence to give the cars 30-minute charges, as they pass the barn or some given point on your line, alternating the cars taken out of service for charging, as they pass this point. By the time your afternoon



[ATTACHMENT/ENCLOSURE]

EHC -2-

"rush hours" come in the afternoon, all of the cars would be well supplied with current, when you would again continue all of the cars for another two hours, and after that you could continue the process of giving them the short thirty minute charges.

From the above I think it will be clear to you that with one car in demonstration under ordinary street railway conditions, even though the car might be a good car and in perfect operating condition, it would only be possible to operate it four hours at a time during daylight hours, and that it would be satisfactory to you or a fair example of what you would be able to accomplish with a number of such cars handling your service.

It appears very clear then that you must regard this entire battery car question as a system, and as such the excellent advantages it involves over any other known system, can only be obtained by having a number of cars, and a proper opinion cannot be secured by operating only one car.

Now if you would like to have one or five cars, we will build you either one or five cars upon specifications and service requirements which we will agree upon beforehand with your Mr. Lichter or any one else that you may appoint for such a purpose. You approve the specifications and order. We will deliver you, either one or five cars, or as many as you require, in accordance with the specifications, and if the car or cars perform according to the conditions and specifications previously agreed upon, then you are to pay for them, and if they do not perform according to specifications, then you are not obligated to pay for them. To us there is no risk whatever in such an arrangement, because we know what the cars will do. We do not want any of your money until the cars perform satisfactorily.

If you regard the above proposition favorably and as a fair offer, kindly have Mr. Lichter advised so that he will take up with us the details of the specifications. We will cooperate with him and meet his views just as far as we can, and I believe we can substantially meet them. Your road is not a difficult one to operate over, except at one point, and that is at the Bridge. Here the grade is a bad one, and it will have the effect of reducing the speed of the car from about 25 to about 10 miles per hour, but only on the grade; at all other points you will be able to make 25 miles an hour.

[ATTACHMENT/ENCLOSURE]

EHC -3-

I think I can appreciate how you feel about this battery car proposition being new. It is new. As to the improvements that will come out from time to time, of course we will do all we can to improve these cars. You should not forget, however, that I experimented for three years before I even thought myself that I had a car commercially successful, that was a single truck car. Many improvements and modifications, both in our present type of single truck car as well as in our double truck cars, were therefore experimented with and finally adopted before we offered the cars to the public, and at our own expense. So it has been also with Mr. Edison in perfecting the batteries.

Very likely, however, as time goes on and we have a larger experience in this type of construction we will find ways and means of improving the entire structure, but I think you will admit, as Mr. Lichter has already said in substance, that it is a fact that this system, as we have at present developed it, is a great improvement over all other known methods of car propulsion. Of this there is no manner of doubt.

The car that we have on the Erie R.R. is doing excellent work. It is running in conjunction with steam locomotives on the regular published time tables of the road, and it maintains the schedule better than the steam trains have been able to do. The railroad officials are all highly pleased with the car, a fact which you may confirm by writing to those officials.

I know of nothing more that we can say to you, except that we are anxious to serve you and will do all that we can to meet your requirements to our best ability.

Yours very truly,

R. H. Beach,

President.

[ATTACHMENT/ENCLOSURE]

O O P Y.

Jan. 19, 1911.

Mr. W. W. Wheatly,  
Agent, Chicago.  
My dear Wheatly:

I have your favor of the 18th about Conrades, and have also received his letter of the 16th, copy of which he sent you, and which was in reply to mine of the 18th to him. I fully intended to go to St. Louis, but when I found that I could not go, I wrote Mr. Conrades with a view of inducing him to come here. You will observe from his letter of the 16th that the question is left still in an uncertain state.

I would be glad to go to Conrades or to anybody else and do all I could to induce the purchase of cars, but I cannot convince myself that my presence in St. Louis would in itself result in selling Mr. Conrades any cars. If I thought it would, I would go there at once.

I am writing Mr. Conrades as per the enclosed copy, which seems to be about the only thing we can do. We do not want to send any demonstration cars anywhere. We have three cars out now on demonstration and that is enough. They are all doing good work, and ought to be sufficient for the present. As I have repeatedly said to you: a man who seriously wants to buy cars will come to this part of the country to see them. At any rate that is the way it seems to me.

There is a phase of this demonstration car matter that I fear has not appealed to you, or at least that you do not understand. Supposing that we put the big cars on Mr. Conrades' road; that is only one car. This car will travel about 100 miles per battery charge. Now supposing that car starts out in the morning at 8 o'clock, on a schedule of 20 m.p.h. At 11 o'clock the battery is exhausted and the battery has to be put on charge and remain in the barn until it is fully charged again, which would require 7 hours out of service. In other words the most you could get out of the car, during daylight hours, would be about four hours per day, a condition which you will admit would be very adverse to a practical and successful demonstration of the car before prospective customers. Now, if on the other hand, we sent Conrades five cars, and he could alternate the cars in giving the batteries five minute charges, he could readily keep four cars in constant service, or five cars in service during rush hours, and four cars during off hours.

[ATTACHMENT/ENCLOSURE]

WWW-2-

Don't you see from this how foolish it is to attempt to demonstrate the desirability of this method of car propulsion with only one car? Now in the steam railroad service conditions are quite different. So far as I know steam railroad trains operate on a schedule which requires a lay over usually at the end of the run or elsewhere on the line. In such service a demonstration car has every advantage and facility in service as if a number of cars were in operation, because at these periods of waiting, which are in common practice in any event on the steam roads, the lay over may be taken advantage of and the batteries charged for short periods. If you have not already understood this you will see from the above our position. If there was no other reason than that given above, it would be sufficient to warrant our decision not to send any street railway company a demonstration car.

We have just completed our test of the car in Washington. This road is all grades, running as high as 7%. This car with 113 cells of A/6 battery, operating only on grades, makes 64 miles per single normal charge of the battery. It operates on a schedule speed of 16 miles per hour, and as explained makes the 64 miles in four hours. We think this is splendid results, but the railroad people do not think so. They want the car to remain out all day. This is impossible with one car at least. We have shown them how with two cars, both in service during morning and evening rush hours, they can maintain their schedule, whereas with only one car they can only keep it in service four hours during daylight hours.

Yours very truly,

R. H. Beach,

President.

[ATTACHMENT/ENCLOSURE]

<sup>Ray - Beach</sup>  
H. F. Miller; Home  
Ray Beach and  
He has reported to  
Mr. Radison -  
Don't think any  
answer necessary  
Bygones

SB - Street car

Aug 2/2/11

Miller F. Moore

Roselle, N.J. Jan 31, 11

Member  
American Society Mechanical Engineers  
Society of Naval Architects  
and  
Marine Engineers

Moore -

FEB 2 1911

Mr. Thomas A. Edison  
Orange, N.J.

My dear Mr. Edison

I read with much interest an article published today in the Public and Commercial Advertiser Revolution in car building in which Mr. Beach speaks in favor of building a car with wheel lower on other axle. This received the attention of rail road men many years ago and some road equipped many freight cars and after considerable time abandoned the same as it proved no merit. The Delaware & Hudson R.R. saw a pair of the Patent (?) I have somewhere the models of cars fitted with both low and fixed wheels to demonstrate that fixed wheels proved even with less frictional resistance than wheel lower on other axle.

The Car is very light  
the speeds are low and  
you know what service  
curves there are in street RR  
These Logic wheels are a great  
success

Yours truly  
Mr. F. Moore

Beach

R. H. BEACH  
10 FIFTH AVE. TEL. 1322 GRAMERCY  
NEW YORK  
BEACH STORAGE BATTERY CARS  
(USING EDISON STORAGE BATTERIES)

February 8, 1911.

Mr. Thomas A. Edison,  
ORANGE, N.J.

My dear Mr. Edison:

I am sending you herewith the original letter from the Vice Chairman of the Board of Control of Toronto. The engineers of this city have been here, met you, gone through the battery plant, ridden on the car, saw the details of how we make the cars, and as far as I can see have expressed their entire approval, and if no strong influence is brought to bear upon them, I think they will decide to use these cars. Of course all kinds of influence will be brought to bear upon this Board of Control and the other city authorities and these engineers to induce them not to use the battery car. Perhaps you have not thought of it, but it would be a very serious thing for all of the trolley cars in Canada to have this large and important city adopt this method of operation. You and I know that this is the modern, scientific and economical way to do it, but unfortunately for us we are butting into an old established business, and must expect resistance from every source to every advance we make, therefore we should when an opportunity of this kind offers itself bring to bear the best efforts we are capable of to induce the people to use these cars, or in general to adopt this method.

The best thing that I know of at present that can be done is for you to write a letter to the Board of Control like the copy I enclose you. You will notice that I have suggested that they, if

they desire, engage as their consulting engineers the firm of Westinghouse, Church, Kerr & Co. of this City. My reason for making this suggestion is that this firm have made a study of these cars and the battery and honestly believe in them and will recommend them for use in Toronto. I have this morning communicated with one of the officials of the Company, personally, and he tells me that if they are engaged by the City of Toronto in an advisory way that they will recommend these cars, that they do not do that out of any regard for us, but from an honest belief that they are the best thing that can be used. I can see some advantages in having this firm suggested to the City of Toronto, because they are in no way allied with us. Their alliance whatever it may be in other respects is distinctly with that of the Westinghouse Electric Manufacturing Co., a concern that manufactures apparatus for use with the trolley. They are a large concern of excellent standing. They did all of the electrical engineering work for the great Pennsylvania Terminal in this City, a fact which makes them worthy of respect by any city in the world.

I make this suggestion because on page three of Mr. Spence's letter he says "Who are competent men who will give unprejudiced information and advice?"

If you can see your way clear to write the letter more or less as I have written it it will be the next step towards securing the contract.

I have arranged to go to Montreal and spend there sufficient time in which to assist them to arrive at a conclusion as to the various details of a particular type and size of car to meet their requirements, but the most important thing just at this moment is to convince them that this is the real thing beyond a doubt, and that you can do better than anybody else.

Yours truly,

*R. H. Beatty*



[ATTACHMENT/ENCLOSURE]



# Board of Control

1911

*B. A. Seary, Esq., N. C. Mayer, Esq., Chairman*

*Controller F. L. Chance, Vice Chairman*

*F. L. Church*

*H. C. Lockart*

*J. H. Ward*

Toronto

Feb. 2, 1911.

*Beard*

*This is rather important  
had these things done here  
think of it, come work  
This is up for  
see what kind of  
so & can  
it anyway*

Thomas A. Edison, Esq.,  
Orange, N. J.

Dear Sir:-

As a result of certain conditions, with the details of which it is not necessary to trouble you, the City of Toronto is about to undertake the construction of a street railway system, which at first will be in some degree an extension of the existing privately owned overhead-trolley railway system. It may be that the two systems will be connected and may interchange traffic. They will, however, most likely be totally independent in ownership and operation. Of this new civic railway about ten miles will likely be built this year. Generally speaking, the city system will cover one part of the area of the city, and the company-owned system the other larger and more populous part.

In the year 1921, the franchise of the Company now operating street railways in this city will expire. It is practically certain that the city will then take over the old system and amalgamate it with the new system which the city is commencing to construct. An important question to be immediately settled is the form of propelling power, which the city

*Very cordial  
to all  
of the  
city*

[ATTACHMENT/ENCLOSURE]

Just as I at the end of perfectly known  
known the better because it is more reliable.

More flexible

More Account

Will move our way back  
and much cheaper.

Do not An Effluent

Known time to year.

probable time 10 years

100 of 2. Aiken Co.  
Tiffin Co.  
Adams Exp. Co.  
Graham Mfg. Co.  
Norton Co.  
All other

Effluent, or to probability of Def.

[ATTACHMENT/ENCLOSURE]



*Board of Control*

1911

*G. R. Seary, Esq., M. C. Mayor, Chairman.*

*Controller F. L. Spence, Vice Chairman.*

*J. L. Church*

*H. R. Blacker*

*J. F. Ward*

*Toronto* Feb. 2, 1911.

(2)

will adopt. The improved Edison Storage Battery has been discussed. Factors in the consideration of the question are the practicability of interchanging cars between systems differently equipped, and the fact that before very long the city, if it adopted the storage method, would have to settle the question of transforming the larger system, as the maintenance of diverse methods is manifestly undesirable.

There is, however, a lack of information available here concerning the storage battery method, and even investigation is a good deal hampered by the fact that experts here seem inclined to view the new plan as so much of an experiment, that even immediate effectiveness would not in their judgment warrant the adoption of that new plan until time had proved its continuous success. This view, though it strikes me as unscientific and unprogressive, seems to have a good deal of weight.

It is my intention, personally, to make as much inquiry into the matter and secure as much information as is possible for one without technical or scientific qualifications. My object in writing to you

[ATTACHMENT/ENCLOSURE]



Board of Control

1911

J. H. Seary, Esq. M. C. Mayor, Chairman  
Controller F. L. Phence, Vice Chairman  
T. L. Church  
H. C. Locken  
J. P. Ward

Toronto, Feb. 2, 1911.

(5)

is to ~~ascertain~~ <sup>obtain suggestions</sup> information that may help to this end. What documents are available? What installations may be examined? Who are competent men who will give unprejudiced information and advice? Others of our Board of Control, the body responsible in this matter, will, I am confident, desire to follow such course as they are convinced is most in the public interest, and willing to go to a good deal of trouble and expense with that object in view.

Incidentally, may I mention a detail that has to be considered. Standardization of gauge of a civic railway system is desirable. Our private system here has a gauge of 4ft. 10 7/8". We are told that interchange between ~~the~~ <sup>different gauges</sup> ~~such~~ systems presents serious difficulties, although an unskilled citizen, (perhaps therefore, not qualified to judge) naturally imagines that a mechanical device for speedily and easily changing the gauge of a car-truck, is not an unsolvable proposition, if there were no other method of meeting the difficulty—this, however, is merely by the way.

[ATTACHMENT/ENCLOSURE]



## Board of Control

1911

*B. H. Peary, Esq., H. C. Stewart, Chairman.*

*Controller F. L. Spencer, Vice Chairman.*

*F. L. Church,*

*H. C. Hocken,*

*J. J. Ward,*

*Toronto.*

Feb. 2, 1911.

(4)

Any descriptive articles, documents, prospectus, or other information relating to the Edison Storage Battery, and its adaptation to a street railway system, will be much appreciated, as well as any other information you feel free to send me on lines above mentioned.

Thanking you in advance for your anticipated reply, and with much respect, I am,

Yours sincerely,

Battery  
Sheet Cor

Wants  
2/11/11

Having  
agreed to this  
I will sign  
S

Mr. F. L. Spence,  
Vice Chairman  
Board of Control,  
TORONTO, CANADA.

Dear Sir:

Your esteemed favor of February 2nd is before me. I did not reply to this immediately upon receipt of it because I had understood that your engineers, Messrs. Rust and Aiken, were to visit our Works, and it occurred to me that it would be better to await their arrival before replying.

I can appreciate how you feel about recommending to your people the use of cars driven with storage batteries, especially as the use of the storage battery for driving street cars is new. Permit me to call your attention to the fact that while the specific application of storage batteries to this particular service is new, yet the several details of the car and battery and their uses are by no means new. The battery has been in successful and very extensive use for six years under such diversified conditions as to leave no doubt of its permanent success. The conditions that I refer to are when used in trucks, and these conditions are usually much more severe than when the same battery is used in a street car. A little thought upon your part will make this clear to you. The battery used in a truck is usually concealed within the body of the truck in a dark place, usually in a dirty place, where it is not readily getatable, whereas in a street car it is in a light clean place where it is readily getatable; also in operating trucks they are usually in the hands of men not qualified to properly care for them. In street cars where a number are used a system of inspection can, and should be, installed which will at all times give to the batteries the attention which they require. This attention is small,

but nevertheless should be given; therefore if the battery has operated during the long period of time that it has under the adverse conditions of trucking I feel that it is safe to say that it will do even better work in street car service under the conditions you have. We have had experience enough to warrant us in giving you a proper and businesslike guarantee of the life of the battery. This insures you against financial loss on account of the possible failure of the battery to perform its work in your City; we take the risk.

As to the car itself: This is a matter which any engineer who is competent can judge for himself. The motor which drives the car is old. It operates under conditions the same as in the trolley car, practically, a slightly changed condition due to the battery is more favorable for the motor than when used with the trolley. This is due to the lower voltage of the driving current, so that it can safely be said that if there is any change in the conditions so far as the electrical equipment is concerned, that is the motors, the controllers and the wiring of the car, it is favorable to the electrical equipment rather than unfavorable. It can therefore reasonably be expected that you will get a longer life from this part of your car structure by reason of the battery used than you would with the trolley.

As to the balance of the car: The design has been very carefully and intelligently worked out. The car body is made light, but not so light as to be fragile. It is stronger and more substantial than bodies have been made heretofore. The main feature of the body is the introduction of a lattice steel girder which gives to the body great rigidity longitudinally, and permits of a reduction in weight of the various parts of the structure, so that the total weight of the 26 ft. carbody is about 3500 lbs. as compared with the lightest

standard body made which is about 6600 lbs.

As to the structure of the truck, almost the same remarks apply. The truck is splendidly made. It is welded instead of riveted. It is intelligently designed, and I believe it is the best car truck ever made.

I am, personally, in no way interested in the manufacture of these cars, trucks and electrical equipment, and I have no selfish interest in their use and what I say to you in regard to them you may consider as an opinion unbiased.

As a proof of the excellent economy secured in the use of these cars I enclose you a reprint of a letter written by the Genl. Supt. of the Railroad in Atlantic City, who tested one of these cars, which if you will refer to any of the engineers in your locality you will see, in case you are not already familiar with these facts, that the operation of this car as to the cost of current per car mile is much lower than you are now getting (I think I am safe in saying one third) from any like car in your city.

I have made some inquiry in regard to engineers in this locality who know something about these cars and batteries, and I am told that the firm of Westinghouse, Church, Kerr & Co., New York City, are a reliable firm, that they have studied this subject and are competent to advise you. You may communicate with them in regard to the matter, and I believe they would be glad to act as your consulting engineers.

In a general way, you are safe in assuming that the operation of these cars on your proposed road will be satisfactory to you. The cars are more reliable in their operation than the trolley. The system is more flexible, it is more convenient and the cars will move over any track in which the gauge is suitable.

In addition to the above advantages it happens that the combined



cost of all of the elements that go to make up a complete railway, the net result is very much cheaper both in first cost and in the cost of operation.

We can refer you to many firms who have used these batteries and shall be glad to do so if you desire.

I have written the Federal Storage Battery Car Company to mail to you, which I believe they have done, a complete set of their publications relating to these cars.

There is one of these cars in operation here on the Watchung branch of the Erie Railroad, which is doing excellent work. It has replaced a regular steam passenger train. Its cost of operation is about 15¢ per car mile as against \$1.14 per train mile, and the service performed for the 15¢ is exactly the same as that heretofore costing \$1.14, which gives you an idea of the relative economy.

I note on page three of your letter that in regard to the standardization of the gauge of your road that your present gauge is 4' 10-7/8". I know of no method by which you could economically change the gauge of your cars, that is to fit the tracks so constructed as to permit a shifting of the gauge. I know of no case where this has ever been done, and would not believe it to be a feasible scheme. However, as I have never gone into this particular phase of truck construction I could not very well advise you, but I should think it would be a difficult and very unsatisfactory arrangement. I see no reason, however, why you should not build your road of the same gauge as the balance of the roads in Toronto. Your cars can be built to any gauge you desire and these cars will be able to operate, provided the gauge is the same, over any of the lines in Toronto from your own forward or back, but if you install these cars the trolley cars will not be able to operate

FLS -- 5

over your line because you will have no trolley wire to feed them.

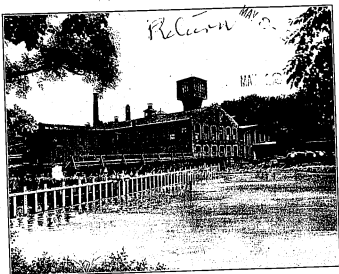
I have requested Mr. Beach, President of the Federal Storage Battery Car Company, who manufacture these cars to write you, and any further information you desire in regard to the matter I am sure he will very cheerfully give you. I saw him yesterday, and he said he had seen your Messrs. Rust and Aiken, and that he will be glad to go to Toronto to confer with you and your engineers as to the details of the proposed installation, and ~~I take pleasure in recommending Mr. Beach to you and feel sure that you can rely upon his recommendations. You may trust him with the business which you have, and if you decide to place a contract with his firm for doing this work, I believe you will be satisfied with the results.~~

Yours truly,

T.A.E.

50-  
Beach

Beach - 1176 4



*Noted Beach*  
*I think the Kiln has plant letter for 112*

**FOR SALE**

**A Modern Factory**

**AT SOHO PARK, N. J.**

(The depot is within 25 Yards of the property line.) 11 miles from New York on the Greenwood Lake Division of the Erie R. R., two miles from Newark N. J., 45 minutes from Broadway, New York.

**REAL ESTATE.** The land consists of an irregular plot containing  $8\frac{1}{2}$  acres, bounded on the north by the main line of the New York & Greenwood Lake R. R.; on the east by the Company's own private railroad siding; on the west by Willett Street, and on the south by the Morris Canal.

The Second River flows through the property furnishing ample water for the boilers and manufacturing purposes, and also developing 75 horsepower through a water turbine. The land is all solid upland, with no marsh or soft ground. There are two artesian wells supplying ample pure water.

**BUILDINGS.** The photograph, plan and isometric perspective give a fair idea of the character of the factory. It is of full mill construction. The floors are 5 inches thick (4 inch with a 1 inch maple top). The floor space is 55,000 square feet. There is a stable for four horses and an amply large wagon house.

There is a new fire-proof boiler house with light industrial railroad and tracks for handling the ash. For coal there is a storage capacity of some thousands of tons should it be desired to bring in a reserve stock over the canal.

There is plenty of shafting through the mill.

The buildings are sprinklered throughout and wired for electricity.

**PLANT.** The plant comprises the following:

A freight elevator—75-horsepower water turbine—a steam engine of about 50-horsepower—five good boilers developing 800-horsepower, all fitted with Parsons Automatic Force Draft System—a Robbins Belt Conveyor from the new coal trestle to the boilers—a small Westinghouse electric generator belted from the steam engine, developing electricity for the lighting system.

**LABOR.** There is plenty of labor to be had locally, and many attractive workmen's dwellings are situated in the immediate vicinity.

**EXAMINATION.** A watchman is on the premises, and the factory may be examined at any time. Upon application arrangements will be made to meet parties at the station, and conduct them through the factory.

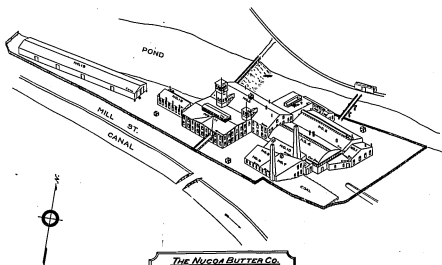
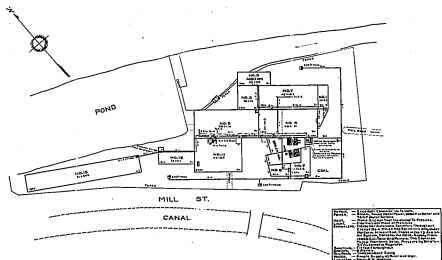
**PRICE.** For price and further information apply to

---

**THE NUCOA BUTTER CO.**  
17 BATTERY PLACE, . . . NEW YORK CITY

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TELEPHONE 2137 REGTOR



**The NICOA BUTTER CO.**  
 South N.Y.  
 Built by Clark & Stone, Inc. 1887

**TIME CARD, APRIL, 1911, ISSUE.**

**ERIE R. R.**

**GREENWOOD LAKE DIVISION.**

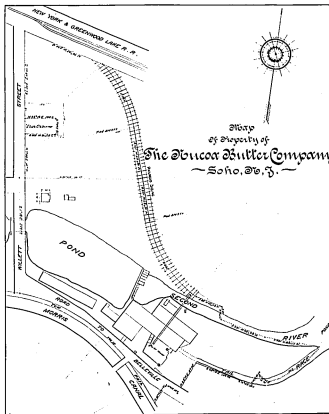
Hudson River Tubes—Through trains leave Broadway and 3rd Street for Erie Station, Jersey City, five minutes apart. Allow 25 minutes for train connection from 2nd Street, 17 minutes from 2nd Street and 12 minutes from the Hudson Terminal Building.

| Leave               | A.M. | A.M.  | A.M.  | A.M.  | P.M.  | P.M.  | P.M.  | P.M.  | P.M. |
|---------------------|------|-------|-------|-------|-------|-------|-------|-------|------|
| <b>ERIE FERRIES</b> |      |       |       |       |       |       |       |       |      |
| N. Y. 2nd St.       | 7.00 | 8.20  | 9.40  | 11.05 | 12.25 | 1.35  | 2.55  | 4.20  | 4.48 |
| N. Y. Chambers St.  | 7.08 | 8.28  | 10.00 | 11.15 | 12.30 | 1.45  | 2.45  | 4.20  | 4.30 |
| Jersey City         | 7.20 | 9.08  | 10.14 | 11.30 | 12.47 | 2.00  | 3.00  | 4.41  | 4.44 |
| <b>*Soho</b>        |      | 10.26 | 11.37 | 11.30 | 11.00 | 2.31  |       |       | 5.07 |
| <b>Soho Park</b>    | 7.40 |       | 10.30 | 11.55 | 1.11  | 2.23  |       |       | 3.00 |
| <b>*Orchard St.</b> |      |       | 10.42 | 11.57 | 1.14  | 2.28  | 0.35  | 4.00  | 5.11 |
| <b>*Orchard St.</b> | 5.27 | 6.39  | 6.55  | 7.39  | 8.28  | 10.00 | 12.46 | 2.13  | 3.56 |
| <b>Soho Park</b>    |      | 6.32  | 6.57  | 7.41  |       | 10.08 | 12.48 |       | 3.58 |
| <b>*Soho</b>        |      | 5.30  |       | 7.45  |       |       |       | 12.15 | 3.52 |
| <b>Jersey City</b>  |      | 5.54  | 6.56  | 7.21  | 8.11  | 8.56  | 10.31 | 1.11  | 2.30 |
|                     |      |       |       |       |       |       |       | 4.21  | 5.37 |

**ERIE FERRIES**

|                    |      |      |      |      |      |       |      |      |      |      |
|--------------------|------|------|------|------|------|-------|------|------|------|------|
| N. Y. Chambers St. | 6.07 | 7.07 | 7.32 | 8.23 | 9.13 | 10.42 | 1.22 | 2.32 | 4.02 | 6.12 |
| N. Y. 2nd St.      | 6.15 | 7.15 | 7.53 | 8.35 | 9.20 | 10.55 | 1.40 | 3.10 | 4.55 | 6.45 |
| Arrive             | A.M. | A.M. | A.M. | A.M. | A.M. | A.M.  | P.M. | P.M. | P.M. | P.M. |

\*Soho Park Station is practically on the property—Soho and Orchard Street Stations within five minutes walk.





SUPERINTENDENT'S RESIDENCE

This modern \$4,000 house is electric lighted and steam heated. The plumbing and all other conveniences are thoroughly modern and up-to-date.

*Beach*  
EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE  
RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

**FEDERAL STORAGE BATTERY CAR COMPANY**

MANUFACTURERS OF

**BEACH CARS**

EQUIPPED WITH

**EDISON STORAGE BATTERIES**

1774 HUDSON TERMINAL  
80 CHURCH STREET  
PHONE 3556 CORTLANDT  
NEW YORK CITY

June 3rd, 1911.

Mr. Thomas A. Edison,  
Orange, N.J.

JUN 5- 1911

JUN 6

My dear Mr. Edison,

I enclose you herewith letter from MacAndrews & Forbes Co., which confirms the several conversations I have had with their Mr. Ransom. The agreement which he outlines is exactly in accordance with the understanding I had with him and as I understand your instructions were.

We are getting very badly crowded for room over at the little shop and have simply got to have more room so kindly do not delay closing this proposition any longer than is necessary.

I enclose you copy of my reply to Messrs. MacAndrews & Forbes Co.

Yours truly,

*R.H. Beach*

President

B/GM  
Enc.



[ATTACHMENT/ENCLOSURE]



EARL JUNGBLUTH, President  
ALFRED HELLOR, Vice President  
I. SEVENWRIGHT CATTO, Vice President  
W. E. RANSON, Secretary & Treasurer

CABLE ADDRESS "MACFORBES"

*No. 111 Fifth Avenue*

*New York, June 2d 1911.*

Mr. Ralph H. Beach, President,  
Federal Storage Battery Car Co.,  
50 Church Street, City.

Dear Sir:-

Referring to our several interviews and telephone conversations with you in regard to our Silver Lake, N.J. property, we wish to state for the purpose of record and mutual understanding the essential points involved in your offer to purchase the property in question, as per your telephone message of the 31st ult., viz:

Your Company agrees to purchase the property at the price of \$35,000.00, paying \$5,000.00 at the time of passing the title, \$5,000.00 at the end of one year, (say June 15th 1912) the balance at the end of 5 years, (say June 15th 1917) the deferred payments to be secured by a proper purchase money bond and mortgage bearing interest at the rate of 5% per annum, payable semi-annually.

This proposition is acceptable to us and we will thank you for a confirmation of same in writing, upon receipt of which we will proceed with the preparation of the necessary documents.

Yours very truly,

MacAndrews & Forbes Company,

By- *W. E. Ranson*  
Secretary.

[ATTACHMENT/ENCLOSURE]

C O P Y

June 3rd, 1911.

Messrs. McAndrews & Forbes Co.,  
111 Fifth Ave.,  
New York City.

Gentlemen:-

Attention of Mr. W.E. Ranson, Sect.

We have your esteemed favor of the 2nd, in regard to the Silver Lake proposition. The conditions set forth in your letter are in accordance with our understanding except that the property will be sold to Mr. Thomas Edison or Thomas Edison, Inc., I am not sure which but either will be satisfactory, instead of to this company. I am sending your letter together with copy of this reply to Mr. Edison today and you will hear directly from him in regard to it, probably from Mr. Dyer.

Yours truly,

President.

E/GM  
CC-T.E.

TELEPHONE HARRISON 70

BS- articles

LUCIEN WHEATLY  
REPRESENTING  
FEDERAL STORAGE BATTERY CAR CO.  
EDISON STORAGE BATTERIES

MCCORMICK BUILDING 322 MICHIGAN AVENUE  
CHICAGO

June 5, 1911.

Mr. Thomas A. Edison,

Orange, N. J.

JUN 7- 1911

My Dear Mr. Edison:\*

Enclosed I am handing you an Editorial, which was in the Chicago Record Herald this morning. It sounds good, and speaks well of you and your efforts. Think I will close a contract Wednesday with Mr. Bucklen, whom Mr. Beach and I brought to your office about two weeks ago, for one of the Beach Cars, equipped with your battery.

Yours very truly,

*Lucien Wheatly*

LW-A

[ATTACHMENT/ENCLOSURE]

Something for Edison to Live For.

THOMAS A. EDISON, full of years and deeply wise in his own field, has been a guest at the National Electric Light Association in New York. In addressing the convention he turned the platform into a kind of Mount Pisgah and shot a glance into the promised land of Further Electrical Development.

Mr. Edison makes the confident prophecy that electrical transportation will be revolutionized and that the trolley is certain to be superseded by the storage battery. Expectation on this point has long been rife, and the positiveness of the Nestor of electricity is encouraging indeed. If the confidence with which he forecasts the future can but be equalled by the promptitude with which his prophecy comes true, the world will be well pleased.

We will even hope that this betterment may be reached in Mr. Edison's own lifetime and that, before he leaves us altogether, his eyes may be gladdened by the sight of city avenues through which multitudinous street cars are dashing ahead under their own steam, so to speak—by which we mean that they will have their own power aboard, instead of at some power-house three or four miles away. We will even pray that the first of these new craft may have Mr. Edison himself aboard as the passenger of honor.

135-544 or  
JAMES GOODEN  
ATTORNEY AND NOTARY

Santa Barbara - California

June 5th, 1911

Am 6/14

Mr Thomas A. Edison:

Dear Mr Edison:--

We are now in a turoil in our city about the granting of a 50 year franchise to the Santa Barbara Electrical Company ~~XXXX~~ I am one of those who believes that the trolley has seen its best days, and therefore do not desire to tie up the city with such a long term franchise. I believe that your storage battery is going to solve the problem, <sup>if you get the battery</sup> and shall be glad to have from you some data. I have seen recently in English and American Journals that you have succeeded in doing great things and I hope you will supply me with some particulars.

Yours truly,

James Gooden

We are successfully running street cars with the new battery, on two small roads the trolley has been abandoned, ultimately I am of the opinion that all cars on the streets of cities will be operated by storage batteries, because they are cheaper to operate & require less investment for the whole system.

Beach

June 9, 1911

Wm

Mr. Edison -

Re the attached. The only trouble I can see with this high rate boosting is that the cells probably never are discharged down very far - and a discharge now and then is healthful exercise for the Fe.

In themselves, I can't see any harm in the 200 ampere ( $4\frac{1}{2}$  times normal rate) boosters, the only danger being that if they are too long the temperature may run up, but Mr. Beach states that does not exceed  $98^{\circ}$ .

From the user's stand point, the cells will require more frequent filling and the watt hour efficiency may fall off due to the high charging voltage, but if the consumer is satisfied, all that is up to him.

As a precaution to protect the Fe it seems to me it would be well to recommend that every 3 weeks or so the battery be charged 12 or 15 hours at normal rate followed by a run without boosters so that cells will get something like a complete discharge every now and then.

Wm

[ATTACHMENT/ENCLOSURE]

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

FEDERAL STORAGE BATTERY CAR COMPANY

MANUFACTURERS OF  
**BEACH CARS**  
EQUIPPED WITH

EDISON STORAGE BATTERIES

1778 HUDSON TERMINAL  
80 CHURCH STREET  
PHONE 3386 CORTLANDT  
NEW YORK CITY

June 8th, 1911.

Mr. Thomas A. Edison,  
Orange, N.J.

My dear Mr. Edison:-

I have your note about Stewart. I really know very little about him and have absolutely nothing to do with him. Nevertheless he keeps sending me letters through Mr. Henford. I just got another package which I am sending you.

In connection with this I received a very interesting letter from Messrs. Dick Kerr & Co., Ltd., of London, which letter I am enclosing you a copy. You will note in the letter that they give it as their opinion that the trolley business is doomed in Great Britain. I guess the truth is it is doomed everywhere but just when we will seal the doom is a hard question. The fact is, as I see it, that Dick Kerr & Co. realize that trolley lines in England don't pay. This probably is true. One of the reasons is that in England you know the Board of Trade rules governing the construction of street railway require an immense outlay for feeders. In most cases they limit the voltage drop to 5%. This makes it <sup>so</sup> that they just simply don't pay. You, of course, will see the advantage of the battery car in connection with this.

To me it seems that when the slow-going Englishman realizes what the battery car can do for him he will go into it extensively. The occasion of this correspondence from Dick Kerr & Co. came out of a very small thing.

*Answer*

*With note changed what do you think*  
JUN 9 - 1911  
*Edison*

[ATTACHMENT/ENCLOSURE]

Thomas A Edison---2

An editor of the Tramway World was trying to get us to give him an advertisement. I did not want to advertise over there because in the first place I could not afford it and in the second place I thought it would not amount to anything now. In order to get rid of him I told him that if we had an agent there some business might develop. He sent a letter to Dick Kerr & Co. and they wrote us asking about the success and I wrote them telling them the facts and suggesting it may be worth their while to take it up. The letter I enclose you is their reply. I think this letter expresses the opinion among the best class of people, I mean the engineering firms, in Great Britain.

I have another little point which is very interesting. I quote from a letter received yesterday from our Mr. Scott, whom I sent down to Salisbury to see how that car was running. We have had a little difficulty with people using these cars in that they overcharge the battery. This fault I was led into on account of my intent to keep the cost of the car down. I should have put a recording ammeter in the car which shows the input and output of the batteries and would permit the operator to get a pretty good idea of the condition of his batteries as to charge. As stated above I did not do this because I wanted to save the money but I will have to do it and in future will put one in each car.

The other thing I want to tell you is this, quoting from Scott's letter: "They are running the car entirely on boosts averaging 180 at 200 amperes boasting 5 to 30 minutes averaging altogether 4 hours per day = 119 K.W.hours and making 99 miles per day. This is a trifle over 1 K.W. hours per car mile battery intake as near as I can figure it. Is this the right way to handle the car? Lefevre told me it was (Lefevre is one of our workman) but I think not. Please advise. There are about 750 passengers average per day and frequently as many as 65 at a time (the car seats 26) but seldom less than 20. The stops average about 11 per mile. Anyhow, everyone is pleased but I am not satisfied. Notwithstanding with only one car carrying all fixed and operating charges with interest and depreciation the Concord proposition is



[ATTACHMENT/ENCLOSURE]

Thomas A. Edison---5

paying more than \$25.00 per day profits." What I want to call your attention to is that down there in that little town on Concord, the population is about 5000, on a road two miles long with just one car the proposition on the whole is actually paying and still have a profit of \$25.00 per day. I have been a long time connected with street railway work but I have never heard of a one car road that could pay expenses before. This road at Salisbury has grades as high as 6% so we cannot be accused in this case of working under easy conditions. The car has been operating for two months and there has not been the slightest difficulty of any character. The temperature of the battery is 98. As far as I can see everything about the car and battery is all right. This car is equipped with 90 A-6 cells.

Yours truly,



President.

B/CH

[ATTACHMENT/ENCLOSURE]

57 Moorgate Street,

London, E. C. May 24th, 1911.

Dear Sirs:-

We have had further important interviews with the Directors of the London General Omnibus Co., and Mr. George Cawston.

We also have full confirmation of Morgan's control of the Tubes and Omnibus business; the latter were secured last week only. The Omnibus people want to get full control of the Battery for traction purposes in London, in order to stop its use on the County Council tram lines, as the latter are now proposing further extensions. These we can do at half the cost of the conduit system, and the job would run into close to £2,000,000 Sterling. If therefore, Edison loses control of his Battery here to the Morgan interest, he will lose this big job and future renewals of batteries. If he keeps control, he can sell to everybody and get his price. This will be true everywhere, as the Morgans will use the Battery in their own interest and not make an open market, as is the case in America.

We are willing to close the deal with the General Omnibus for 1,000 omnibuses to be made in 2 years, if Mr. Beach gives us prices and guarantees, as requested, and also a statement, that no batteries will be sold to competing omnibus companies, so long as the London General keep 1,000 omnibuses in service. Please get this at once, and cable it to me. At the same time, if so authorized, in writing we will at once take up the tramway matter with the County Council. We must, however, be satisfied that the batteries and equipment will be forthcoming when required. You must also send us some more catalogues of the Battery, including the old edition, and also of the Beach Car Catalogue.

Mr. Cawston will, as I wrote you, take any required part in the Battery deal, backed by the Rothschilds. He is very keen on this. He will, if so required, buy up the Selly Oak Works, either for the manufacture of Batteries and Cars, or Cars only, as a private enterprise subject to proper arrangements for a supply of batteries.

His idea is to form a big Company to handle freight for the Railways Companies in all English Cities. This service will require 2000 vehicles which can be run at from £100 to £185 per year less than horse or petrol cars. These he would make at Selly Oak.

These facts will show you that it is necessary to ascertain who is to control the Battery before we can do anything here. In this connection, I learn that some difficulty exists with the Battery as to its loss of voltage and low efficiency.

I have advised Mr. Beach that my controller absolutely settles this question, and that we have proved it here up to the hilt on our own car. If he gets Mr. Irwin in control of the Battery business here, they can have the use of this apparatus and double the value of their battery. I can get one of the new type ready in two weeks, as patterns are finished, and will come over and demonstrate its value if furnished with £150 to pay cost of completion, testing and traveling expenses. Our motors are also worth a fortune to the business, on account of their high torque and efficiency, and light weight. You may take it from me that Edison is solely delaying this English business because he wants

[ATTACHMENT/ENCLOSURE]

to get over the defects above named in his battery, and for no other reason.

I have got over these defects after 7 years work, and can put him right, if he will make the trial.

Please put Mr. Irvin and Mr. Beach in full possession of above facts, and make them realize that Morgan's people have secured control of the traction interests here at a cost of many millions sterling, largely because they know that the Edison battery solves the surface problem.

Knowing this, they will spare no effort to control it. If they do, Edison will lose half the battery business and almost all the tramway business, while if Mr. Irvin controls, he will get all there is in sight.

If Mr. Irvin wants to win out, he should now get me over there with a controller, and we shall then be able to make a deal.

I can show the motor in New York. I can also bring over a letter from Mr. Cawston, which will greatly assist us.

If this is done, I should like to have a wire by June 1st, so that I can sail on the 3rd.

Yours truly,  
W. N. Stewart.

Messrs. Geo. E. Hanford,  
25 Broad Street,  
New York.

[ATTACHMENT/ENCLOSURE]

57 Moorgate St.,  
London, E. C. May 26th, 1911.

Dear Sirs,

I am in receipt of yours of the 15th instant.

We are quite ready to proceed with the construction of a sample omnibus, on receipt of Mr. Beach's figures as to cost of Battery, maintenance, guarantees etc.

Our customers, the London General, would like to get control of the battery for use on tramways, in order to stop the County Council from using the system on their cars.

This would not suit Mr. Edison and Mr. Beach, and we shall not consider any such arrangement.

We shall have no difficulty in getting cash for a vehicle works here, if Mr. Irvin gets the battery business finished.

Re Margetts Tyre.

I have seen these people. They have been getting a very uneven quality of rubber on the treads from the present makers, and do not care to send any tyres abroad until their own works are in operation, which will be in about two weeks time. They are right in this as it would harm us if some of the sections were of bad quality. They will send two wheels as soon as possible and these may be used in front or rear, provided the brake apparatus can be suitably attached. This will probably be the case.

It is highly probable that Mr. Cawston will seriously take up the question of forming a Company for introducing railway vans, as the figures show a high economy over the costly horse system now in use.

I hope to have more information for next mail. Look out for the Daimler people, as their man has gone over.

Yours truly,  
W. N. Stewart.

[ATTACHMENT/ENCLOSURE]

*R.H. Beach*

C O P Y

Dick Kerr & Co., Ltd.  
Abchurch Yard  
Cannon St.,  
London, Eng.

*no ans*

May 23rd, 1911.

R.H. Beach, Esp.,  
Pres. Federal Storage Battery Car Co.  
1779 Hudson Terminal Bldg.  
New York City.

Dear Sir:-

We beg to acknowledge receipt of your favor of the 5th inst. together with the printed matter referred to therein. We have considered very carefully the proposal which you make but regret we cannot see our way to enter into negotiations on the subject. No doubt you would prefer that we give you a definite reply at once rather than waste time in correspondence. Our decision is not based on any lack of appreciation of the work you have done in developing this very interesting improvement in rail traction; but our conviction is that in this country at all events the tram way business is doomed owing to the growing competition in self propelled vehicles without rails. We have to thank you and Mr. Wilcox for kindly giving us the opportunity of considering the matter.

Yours faithfully,

*Beach*

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE  
RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

FEDERAL STORAGE BATTERY CAR COMPANY

MANUFACTURERS OF  
BEACH CARS

EQUIPPED WITH  
EDISON STORAGE BATTERIES

1728 HUDSON TERMINAL  
80 CHURCH STREET  
PHONE 3383 CORTLANDT  
NEW YORK CITY

June 9th, 1911.

Mr. Thomas A. Edison,  
Orange, N.J.

My dear Mr. Edison:-

JUN 10 1911

I just talked with MacAndrews & Forbes, the owners  
of the Licérico Works, and Mr. Ransom, the Manager, told me that the  
property would be deeded to you and the deed dated the 16th day of this  
month. The reason for this delay is that they want their Board of Direc-  
tors to confirm the sale and they have a meeting on the 14th. This is  
purely formal but as you are purchasing real property you should have  
this formality, I believe, in order that no question as to title should  
thereafter arise.

Yours truly,

*Att. Beach*

President.

B/CH

Call Address "Edison's New York"

Beach

From the Laboratory  
of  
Thomas A. Edison,

Orange, N.J. June 13th 11.

R. H. Beach, Esq.,  
50 Church Street,  
New York City.

Beach:-

The opinion of boys here is that the boosting charge is all right at Concord, providing that the temperature never gets above 98, and what is better 95, and that every two weeks the battery should be given a long charge of twelve hours to insure that the iron should not go dopy. Also that particular attention should be given to filling with water. It should be kept up high as per instructions and never be permitted to go low, as to be too close too plates.

The idea boost is:- take out two-fifths and then boost. If you take out three-fifths before boost it is harder on battery and not so economical.

Better get a days run schedule showing ampere input and output on boosts and all data, mileage etc. on boosts, temperature, water line and send it to us.

(Signed)

EDISON.

*Beach*

**EAST ST. LOUIS, COLUMBIA & WATERLOO RAILWAY.**

OFFICE,  
STOCK EXCHANGE BUILDING,  
314 NORTH FOURTH STREET.

16540

St. Louis.

June 20, 1911.

Mr. LeRoy Smith,  
Sales Manager, Federal Storage Battery Car Co.,  
80 Church St., New York.

Dear Sir:

Yours of May 22nd came duly to hand. We are obliged to you for your consideration and want to apologise for our seeming delay in answering you. We have been quietly investigating ever since we received yours of May 22nd. Every body is inclined to a think of his own, and we are inclined to think your car might be a good thing for any side line or feeder line by way of a connection with our main line of road, but as a straightout suburban proposition we do not think you have your proposition perfected as yet. That is why we made you the proposition we did, and which we still feel you ought to have accepted.

As we are being pushed on our proposition we are practically forced to go ahead with the over head system on our first construction.

I wish to say in this connection, emphatically, that I have always wished and hoped for your successful solving of this problem which you are working on, but which I now feel you yourselves still consider unsolved, owing to your non-acceptance of my proposition.

You will please excuse me for saying that I feel you have made a mistake, as per my explanation made to Mr. Wheatly when he called on us here last.

If there are any new developments in your system as you go along that you feel you would like to keep us posted on and which we might be interested in we will be very thankful if you will let us hear from you.

In conclusion, we wish to thank your Mr. Edison and Mr. Beach for the kind attention shown our Mr. Liehter when he called on them by way of investigating your storage battery car.

Yours very truly and appreciatively,

*Edwin J. St. Louis*

President.

Carbon Copy to  
Messrs. Thos. Edison,  
W. W. Wheatly,  
L. C. Haynes, V. P., E. St. Louis & Sub. Ry.  
R. H. Beach.



*Pat Beach*  
AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE  
RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

FEDERAL STORAGE BATTERY CAR COMPANY

MANUFACTURERS OF  
BEACH CARS

EQUIPPED WITH  
EDISON STORAGE BATTERIES

1772 HUDSON TERMINAL  
30 CHURCH STREET  
PHONE 3386 CORTLANDT  
NEW YORK CITY

*Beach - all right*  
JUL 10 1911

July 8th, 1911.

Mr. Thomas A. Edison,  
Orange, N.J.

*Will give you a sketch of one  
that will work -*

My dear Mr. Edison,

*Edison*

We are up against a problem which seems like a very little thing but we have got to get it solved somehow. . It is this problem of providing a whistle for cars in steam railroad service. We have been trying the Hutchinson Klaxon horn but it is not worth the powder to blow it up. Doh't tell this to Hutchinson because I don't want to hurt his feelings but nevertheless it is true. I believe the thing can never work permanently. They start out all right but get hoarse and we have to keep constantly adjusting them and we want something on these cars for signaling that is dead reliable.

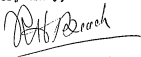
I have thought of working out some kind of a little motor compressor. The trouble with that is it takes so much power.

Would it be possible to make a special phonograph and reproduce a regular steam whistle? This seems to be the best thing if it is possible. Whether you could get it loud enough or not I do not know but I have often heard tones in the phonograph that were plenty loud enough. Kindly let me know what you think about the phonograph idea and if we cannot do it I will try and work out some kind of noise making thing that will do. We might put a little compressor over the axle and when the car is coasting pick up air enough for it. This don't seem like much of a problem but I have looked everywhere and can't find a horn that is any good. I like that phonograph

T.A.E.---2

scheme because it takes very little power. If you think it is worth  
while I will come over there and do the experimenting.

Yours very truly,

A handwritten signature in dark ink, appearing to read "R.H. Beach". The signature is written in a cursive style and is positioned above a horizontal line.

President

B/GH

Post-Beach

My dear Mr Edison

These go to all the Presidents  
or General Managers of all electric  
roads already established and those  
projected in the U. S. as well as  
to the General Mgrs. of all  
Steam railroads, except to the latter  
we send a different letter.

Along with the pamphlet goes also  
a cut of the Erie car and of a  
single truck car, just car size,  
with additional performance  
records on the backs of these  
cards. The cards are not  
off the press yet.

R. B. Beach

MWB  
7/17/11

[ATTACHMENT/ENCLOSURE]

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

FEDERAL STORAGE BATTERY CAR COMPANY

MANUFACTURERS OF

BEACH CARS

EQUIPPED WITH

EDISON STORAGE BATTERIES

1778 HUDSON TERMINAL  
80 CHURCH STREET  
PHONE 2386 CORTLANDT  
NEW YORK CITY

*Meadcroft*

August 2nd, 1911.

Mr. Thomas A. Edison, Pres.,  
Edison Storage Battery Co.,  
Orange, N. J.

Dear Sir:

Herewith I beg to enclose a complimentary copy of paper prepared and read by our President, Mr. Ralph H. Beach, at the last Convention of the Electric Railway Association of the State of New York, upon the subject of the Edison Storage Battery and its application to railway car operation by the Beach Cars as developed by Mr. Beach. This paper has excited so much favorable comment from the electric railway world, I thought you would like to receive a copy.

It may also be of interest to you to know that besides very economical and reliable operation of our battery cars on small roads, these cars are being operated very satisfactorily at an exceedingly low operating and maintenance cost on a number of the most important electric and steam railroad systems of this country, and if you care to investigate further we would be pleased to refer you to the operating officials of those systems using Beach Cars so that you may obtain first hand reports as to the success of this new method of car operation.

We would also be glad to send you some late printed matter.

Very truly yours,

FEDERAL STORAGE BATTERY CAR CO.,

*R. H. Beach*

Sales Manager.

LRS/R  
Enc. 15

AS  
Beach

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

FEDERAL STORAGE BATTERY CAR COMPANY

MANUFACTURERS OF

BEACH CARS

EQUIPPED WITH

EDISON STORAGE BATTERIES

NEW ADDRESS:

Principal Office & Works after August 19  
Franklin Street, near Belmont Ave. SILVER LAKE, N. J.  
TELEPHONE: 3133 BRANCH BROOK.

1775 HUDSON TERMINAL  
80 CHURCH STREET  
PHONE 2326 CORTLANDT  
NEW YORK CITY

August 15th, 1911.

Mr. T.A. Edison,  
c/o Morgan, Harjes & Co.,  
31 Boulevard Houssman,  
Paris, France.

My dear Mr. Edison,

When you left I promised to send you data in regard to the long wheel base car as soon as we had it out. We have now finished the car and have already tested it. The car has traveled about 500 miles since we finished it in test runs over the Erie track. You will find enclosed three photographs a quarter view, an interior and an interior with the batteries exposed. You already have a photograph of the line drawing showing the truck construction. This car weighs just under 20,000. lbs. It seats 50 people, that is to say it has a seating capacity of 50 people provided it was all seats. In this particular car you will notice a portion of it is taken up with baggage space which makes it seat 40 people but we call it a 50 passenger car. The car takes on the ordinary tracks of the Erie such as you are familiar with about 650 watt hours per car mile at a speed of 50 miles per hour including the station stops. As far as I am able to judge this car works perfectly. I have ridden in the car almost steadily for five days watching its operation to the best of my ability and I can see no defect whatever except the body is too heavy. It is about 2000 lbs. too heavy but as I did not have the facilities at the time this body was made to get it out quick enough I had Brill make it and they could not make it light enough. We

T.A. Edison-Esq. ---2

issued the design but as <sup>they</sup> had to use stock material in the roof and general framing they ran the weight up on us. However, the car is extremely light notwithstanding the above. You will note it is about 400 lbs. per seated passenger including the battery which consists of 200 A-6 cells.

During last week we had a great many railroad men visit us and they rode on the car. All expressed themselves as very much pleased with its operation and with the slight modifications in the body to reduce the weight I can see nothing further to do to this car to make the type a commercial success on branch lines of steam railroad service. It works in and out all of the yard curves splendidly. It accelerates good.

We will ship this car to Muskogee to-day.

Since you left we have received orders for one car from the Baltimore & Washington Transit Co., 2 cars from Hendersonville, N.C., 2 cars from Rock Hill, N.C., 1 car from the East Texas Traction Co., 1 car from Elkhart, Ind., 2 cars from Canton, Ohio. These are all single truck. An order from the Lewisburg, Milton & Watsontown Passenger Ry. Co. for a car similar to the photograph enclosed.

We are getting moved into the Silver Lake plant and have two cars being put together there now. On the whole we are getting along about as well as can be expected in view of the fact that all of this work is pioneer work.

I sincerely hope you are having a very pleasant trip and will come back with lots of good health and courage.

About the sale of our plans and patents in Europe I believe it is a little too early to consider it. I find we are likely to get some pretty good patents, in fact, better than I had anticipated.

T.A. Edison, Esq. ---3

There are really some new features about these cars and while probably none are fundamental they are as good as anyone can get and they may possibly be worth something. Unless we get an offer that is rather attractive I think it would be a good plan to wait a year or so and get the business developed over here. However, if you get something that really looks good why let her go although I am not just crazy to make any deal.

About the only trouble we have had has been with Billy Bee. Billy seems to think we ought to be more prompt in paying our bills over here. I suppose the truth is we could but we have reduced the account and between cash payments and batteries returned, which were on trial, we owe you now about \$7500.. When you left we owed you about \$14,000. I am following exactly the plan which we outlined, that is, I sell cars for 1/3 cash with order, 1/3 on delivery and 1/3 thirty days thereafter. We keep the first third, you get the second and a portion of the last to complete your payment. This strikes me as being a pretty fair arrangement. We are getting this making of cars down pretty fine when we can build the car as cheap as you can make the batteries which is about where we come off.

Yours truly,

*R.H. Brach*

President

B/GM  
Enc. 3 photos.

*Just received several orders  
over from within several two  
under views.  
Bee - 4.*

W. DOUGLAS LYNNAR  
BARRISTER & SOLICITOR.

*Essex N.Z.*

August 18th 1911.

Private & Confidential

Thomas Edison Esq.,  
New Jersey U.S.A.

Dear Sir,

You will doubtless remember a personal interview I had with you early in July of last year in regard to the suitability of your Storage Battery Cars for the Municipal Tram service of this town.

You then satisfied me personally that they would be suitable for our requirements and after a considerable amount of delay and trouble I have succeeded in getting the Council to order two of these cars from the Storage Battery Car Company, with the intention of ordering further cars if these prove satisfactory, and the contract for these went forward by last month's mail.

I now take the liberty of writing you personally in this matter, and to let you know that there is a very large amount of public interest being taken throughout the whole of this Dominion as to the success of your Battery Cars, and I think it is hardly necessary for me to impress upon you that it is important that a reliable up-to-date article is sent, and I would thank you to give this your personal attention in your own interests as well as mine.

*Received  
Note & give me more  
information about the  
order to 4 cars  
and that I will  
see to it to have  
the 20 cars*



W. DOUGLAS LYNNAR  
BARRISTER & SOLICITOR.

*Gisborne N.Z.*

August 18th 1911.

2.

I have had enquiries from all parts of New Zealand, including some of the largest Municipal Corporations, in regard to these cars, and in each case I have spoken very strongly in favour of them, and as is to be expected in regard to any new invention such as this, there is a good deal of hostility shown to it by experts and others who are no doubt ~~xxx~~ interested in the systems that would be prejudicially affected by its adoption.

For your information I am posting you a copy of the press report of the meeting at which the cars were ordered, and also publications in regard to them which appeared in our papers of last evening and this morning.

I am also forwarding you a copy of my letter to the Mayor of Palmerston North, which has been fairly widely circulated through the Press of the Dominion.

There has also been a considerable amount of other matter published, and it is fairly certain that the result of the Gisborne order will be carefully watched before any further orders go forward.

I regret to say the acting under Doctors orders, I have to take a long rest from public duties, in consequence of my

W. DOUGLAS LYBNAR  
BARRISTER & SOLICITOR.

*Silbaine N.Z.*

August 18th 1901.

3.

having had to undergo an operation for the removal of one of my eyes, which was really caused by overwork, and I intend in a few days to hand in my resignation from the Office of Mayor.

I mention this fact to you in case any question should arise in the carrying out of the order that requires referring back to the Council.

At my interview with you, you were good enough to give me your views on the labour question for publication. This I had done in the leading press of London, Australia, and New Zealand.

I posted you a copy of one of the London papers which I trust ~~you~~ you duly received, and you are satisfied that the report was correct.

Believe me, Yours sincerely,



W.D.L./A.A.G.

[ATTACHMENT/ENCLOSURE]

11/10/1916

Read the letter  
+ let me know if the  
new A.S. will have  
side rubbers etc  
is to be furnished  
Reach old form of A.S.  
should not be sent as its  
so far away - Return  
the letter

Mr. Edison  
New York  
that are going out  
Bill

[ATTACHMENT/ENCLOSURE]

Harry.

Send to Lyones copy  
of Beal's letter &

say for me that I

have not the slightest  
doubt of the success of  
the Cars, ~~is~~

G

I will sign

not out

Wht 10/27

To J. Yodrig Witty R.N.E.,  
NEW ZEALAND,

Article successful -

August 18th 1911.

Mr. Thos. E. Edison,  
Orange,  
New Jersey

~~Mr. Thos. E. Edison,  
Orange, New Jersey~~

UNITED STATES AMERICA

would not sell a battery to  
the maker of it if I was  
great on my feet  
work & success -  
There are 140 cars now running  
in various parts of the U.S.  
3000 have been grown  
250000 of the makers  
on credit  
Jrag

Dear Sir,

As an admirer of your wonderful inventions, and a regular  
payer of the Borough of Gisborne, I am enclosing a cutting from  
our newspaper to let you know what the engineers over this side  
"The Pond" are saying and give you a fair chance to refute their  
statements if incorrect.

Yours faithfully,

J. Yodrig Witty



*But Beach*

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

**FEDERAL STORAGE BATTERY CAR COMPANY**

MANUFACTURERS OF  
**BEACH CARS**

EQUIPPED WITH  
**EDISON STORAGE BATTERIES**

EXPRESS: WELLS FARGO & CO., SILVER LAKE, N. J.      PREPAID: ERIC H. R., SILVER LAKE, N. J.      TELEGRAPH: SILVER LAKE (SILVER LAKE), NEW JERSEY      CABLE: FEBACAR, SILVER LAKE, NEW JERSEY  
GENERAL OFFICE AND WORKS: FRANKLIN STREET, NEAR BELMONT AVENUE  
TELEPHONE: 3123 BRANCH BROAD

SILVER LAKE, NEW JERSEY      October 9, 1911.

Mr. Thomas A. Edison,  
Orange, N. J.

My dear Mr. Edison:

Enclosed you will find a condensed report of our sales to date. You will note that we now have nine cars in operation. All are satisfactory to the users. We have three repeat orders. We are now constructing sixteen cars. We are in one of the buildings but are considerably cramped for room because the tenants in the second building are not out and we understand will not be out until the first of November. However, we are getting along the best we can and making fairly good progress. All the cars we have sold are sold for money or the equivalent. We have no cars on trial and every order we have secured has been secured without any political or personal influence or connivance in any way. The terms on which we are selling cars are the same as other car builders sell on. In the beginning we were compelled to sell a few cars on specially long terms in order to get some in operation. We did this to overcome the peculiar prejudice against battery cars. This prejudice has in no means been entirely overcome but in some measure it has. I find that in localities where we have cars we get more orders; for instance, we sold a car last Spring to Concord, N. C., and we have now sold in Charlotte, Hendersonville, N. C. and Rock Hill, S. C., all because of the successful operation of the first car at Concord. We did have out three cars on trial. These have all been sold; the one at Washington was sold to Patchogue; the one at Philadelphia was sold to Washington; and the one on the Erie road was sold to run between Montandon and Mifflingburg, Pa. It is interesting to note the price secured for these second-

*W. F. ADAMS*  
*See Beach*

Thomas A. Edison -2.

hand cars; almost the price of a new one and nearly, if not quite, ten times the price of a second hand trolley car.

The prospects for business are good, notwithstanding the fact that the car business generally is very bad. Three of the five plants of the Brill Company are closed: the Barney and Smith plant at Dayton, O. is closed. Prices of standard equipment are extremely low. For instance, G.E. 52 equipment which for years has sold at \$1125. is now being sold at \$750.

We are getting some experience showing the cost of operation of these cars extending over a considerable period of time. The Suffolk Traction Company report that their cost of operation is 11 $\frac{1}{2}$ ¢ per car mile. In this 11 $\frac{1}{2}$ ¢ they are paying 3 $\frac{1}{2}$ ¢ per k.w. hr. for current. This is a very fair showing and compares very favorably with the trolley. We had estimated in steam railway service that the cost of operation of a double truck car would be 9.08¢. The Montandon & Hifflingburg Company report that their actual cost of operation is 9.5¢. This Company are paying 1 $\frac{1}{2}$ ¢ per k.w. hr.

We are putting into these cars a superior quality of materials, probably better than the average car builder, and are now beginning to be recognized in the trade as builders of first class cars. We are constantly being asked to furnish cars of this type for trolley equipment but have always declined to do so.

The cars which we have built and which we now have on order consume 3055 cells made up as follows:

400 A/4 - 2,440 A/6 - 215 A/8 - of a total value of \$59,790.

I hope the above will be of interest to you.

Yours truly,

  
President.

B/W

Enc.





Battery Time

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

FEDERAL STORAGE BATTERY CAR COMPANY

MANUFACTURERS OF  
BEACH CARS

EQUIPPED WITH  
EDISON STORAGE BATTERIES

Ans  
10/10/11  
[Signature]

OFFICES: WELLS FARGO & CO., SILVER LAKE, N. J.      PREPARED: ERIC R. R., SILVER LAKE, N. J.      FREIGHT: SILVER LAKE (BELLEVILLE), NEW JERSEY      TELEGRAPH: FERRACAR, SILVER LAKE, NEW JERSEY  
GENERAL OFFICE AND WORKS: FRANKLIN STREET, NEAR BELMONT AVENUE  
TELEPHONE: 3123 BRANCH BROOK

SILVER LAKE, NEW JERSEY

~~Arthur W. Porady Esq~~

Atlantic City

Arthur W. Porady Esq

President American Electric Co

Dear Sir  
I would suggest that the commission  
appoint a committee to investigate  
the storage battery cars now in  
operation on various points  
of the coasting driven by my  
new battery - I predict a  
great future for <sup>cars</sup> ~~the~~  
of this character & think  
the committee if appointed  
will be surprised both  
- technically & commercially

TKZ

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GENERAL OFFICE AND WORKS: FRANKLIN STREET, NEAR BELMONT AVENUE  
TELEPHONE: 3133 BRANCH BROOK

SILVER LAKE, NEW JERSEY      October 16, 1911.

Mr. Thomas A. Edison,  
Orange,  
N. J.

My dear Mr. Edison:

Attached please find letter from W. M. Lysnar, Mayor of Gisborne,  
New Zealand. We have a contract from the City of Gisborne, dated July 15, 1911  
for two single truck cars. These cars are to be equipped each with 105 cells  
of A/B battery. We are at work on the cars and we believe from our study of the  
conditions at Gisborne that the cars will do their work satisfactorily. Mr. Harris  
the agent for New Zealand is here and has been here for several months in your  
battery plant with a view of equipping himself with a technical knowledge so that  
he can handle these batteries properly. He is coming down here to work in a  
short time and will go out to New Zealand with the cars and install them. We  
fell sure that these cars will prove satisfactory. Think you need have no  
hesitation in so advising Mr. Lysnar.

Yours truly,

*R. A. Beach*  
President.

B/W

Bmc.

[ATTACHMENT/ENCLOSURE]

Gisborne, N.B.

3rd June

1  
170

Dear Sir /

Yours of the 28th Uto. to hand, and I may say that, up to the present, the Gisborne Borough Council has not finally decided what shall be done regarding the Edison Beach Battery Car. Its consideration by the old Council was delayed through various reasons, and since the new Council has taken office I have unfortunately been unable to attend the meetings and the matter is standing down, while in the meantime, the Council is proceeding with the tramway system in other respects. Our rails are here and we hope to have the sleepers to hand in the course of the next two or three months and the track will then be put under construction. I still hope and believe our Council will decide on the installation of the Beach cars. Personally I have no doubt whatever about them and I would much prefer to accept the guarantee of Mr. Thomas Edison than the reports of any experts that might be sent to New York to investigate. Mr Edison is prepared to guarantee to our Borough that his battery will do 90% of the work he stipulates it will do for the first three years, and after that time, upon the renewal of the positive plates of the battery which he is prepared to supply at half the original cost, he will guarantee the battery to continue 90% of the work for a further <sup>1 year, Sir,</sup> three years, making a total of six years guarantee in all *Your obedient Servant,*

When in New York I made special enquiries to ascertain whether the battery was out of its experimental stage and I was convinced from the information <sup>from Clark</sup> I obtained that it was so. I might point out that

[ATTACHMENT/ENCLOSURE]

Gishorne, R. E.

3rd June 1901

(Continued, No 1)

while the battery has not been running long in connection with actual tram work, yet it has been running in actual use in connection with waggon work in the United States. One firm I had the opportunity of obtaining particulars from, stated that they had had a large number of delivery waggons in use <sup>for about</sup> between one and two years and they had given entire satisfaction and I learned that there were hundreds of delivery vans in and about New York with Edison's battery and they were giving absolute satisfaction. I put the question pointedly to Mr. Edison himself as to whether the battery could be regarded as out of its experimental stage and he assured me that it was so and to use his own words "The machine is brutally strong and will work for 20 years." Mr. Edison took me into his yard and showed me a motor vehicle which he had constructed over three years ~~ago~~ previously and it was still in use and doing good work, yet he had refused to allow that battery to be adopted because of a slight defect he had detected after about a 3000 mile run on a bad road, and he stated that although he had been pressed by experts to allow the machine to go on the market he had declined to do so until he had what he considered in his own mind an absolutely perfect car, which he claims he has now and which he has been working at for 18 years.

I am, Sir,

With the number of successes that have been achieved by this great inventor <sup>your</sup> ~~less~~ <sup>than</sup> less than 10,000 hands working in his laboratory in New Jersey and it is estimated that there are 9,000,000 people <sup>from</sup> ~~all~~ all over the world today working on his patents, and

[ATTACHMENT/ENCLOSURE]

3rd June 1

*Gibson, B.S.*  
(Continued, No 2)

170

assurance and guarantee given by such an eminent man on this question of the Beach Battery Car could, I think be accepted without hesitation by us in New Zealand.

I also took the opportunity of discussing the prospects of the car with several of the greatest electrical engineering experts in London and tried to ascertain if they knew of any reason why the car should not be successful, and while there were strong objections to it, they were unable to give any tangible reasons against it. If Mr. Edison's guarantee was not forthcoming and there were any reasonable doubts I would agree that it would be advisable to send an expert over to America, but as it is, I fail to see what could be gained by adopting such a course, as the gentleman sent over could only judge the position from what he was told by those people who have used the batteries and assuming that all the data he could collect would be favorable, I still think that the personal guarantee of the great inventor himself is better and of greater value to our Corporations than a report from a dozen experts we might send over to New York. I rode in the cars and it was impossible to tell any difference from the overhead trolley system beyond, perhaps, the fact that the Edison car seemed a little more silent in the working of its machinery. I hope at an early date to be able to discuss the question with the Gibson Council and I trust they will complete the necessary contract for some of these cars.

*I am, Sir,*

*Your obedient Servant,*

Town Clerk.

I might add that I notice the Federal Storage Battery

[ATTACHMENT/ENCLOSURE]

Gisborne, N.Z.  
(Continued, No 5)

3rd June 1901

Company estimate that it will take about £38,000 plus freight and custom charges to construct 8 miles of track with 8 cars. This is very close to the estimate that the Gisborne Council is working upon, which is £25,000 for 7 miles of track with 4 cars.

Trusting that your good city, as well as Gisborne, will ultimately install the Edison cars and that they will prove a lasting and permanent benefit to our respective towns.

Yours faithfully

Mayor of Gisborne.

J. A. Nash Esq.

Mayor of Palmerston N.

PALMERSTON N.

P.S. I had the running cost, as stated by the Beach Battery Co, compared with the actual cost of running the Christchurch cars (as that city is flat like Gisborne) treating electricity at 5d per unit in each instance and the Edison car would cost exactly half to run per loaded car mile as compared to the Christchurch cost for the trolley system. I have not the actual figures by me at the time of writing or I would enclose them but I have given you the bald result.

Town Clerk.

*Bar Beach*

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

**FEDERAL STORAGE BATTERY CAR COMPANY**

MANUFACTURERS OF  
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EXPRESS: WALLS FINE & CO., SILVER LAKE, N. J.    FREIGHT: ERIC S. A., SILVER LAKE, N. J.    TELEGRAPH: SILVER LAKE (SILVER LAKE), NEW JERSEY    CABLE: FERRACAR, SILVER LAKE, NEW JERSEY  
GENERAL OFFICE AND WORKS, FRANKLIN STREET, NEAR BELMONT AVENUE  
TELEPHONE: 333 BRANCH BROOK

SILVER LAKE, NEW JERSEY    October 19, 1911

*Beach ok*  
*Showing in trial of present*  
*Lab -*

Mr. Thomas A. Edison,  
Orange, N. J.

My dear Mr. Edison:

I have a letter from William J. Clark of the General Electric Company notifying that Mr. T. Frame Thomson and his wife will be at the Hotel Belmont on October 31st. Mr. Thomson is a very important factor, so Mr. Clark says, in the Street Railways of Buenos Aires and Montevideo. He wants to meet you. I have taken the liberty of telling him I would call for the entire party with an automobile and bring them out on that date. If you are not going to be available on Tuesday, October 31st, kindly let me know.

Yours very truly,

*R. H. Beach*  
*H.*

B/W



*R. S. Beach*  
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GENERAL OFFICE AND WORKS: FRANKLIN STREET, NEAR BELMONT AVENUE  
TELEPHONE: 3133 BRANCH BRIDGE

SILVER LAKE, NEW JERSEY

November 6, 1911

Edison Storage Battery Company,  
Orange, N. J.

Gentlemen:

Attention Mr. Meadowcroft.

This will introduce Mr. E. E. Segelbaum. Kindly  
show him the model of the horn which was worked out upstairs  
for use on our cars, and oblige

Yours truly,

*R. S. Beach*  
President.

B/W

SALES REPORT AS OF DECEMBER 31, 1911.

| Type                               | Seating Capacity | Speed Capacity | Class of Service | Location        | Operating on Road of              | Time in service Months | Miles  | Max's Grade | Motors | Battery | No. of cells | Price    | Price of Battery |          |          |
|------------------------------------|------------------|----------------|------------------|-----------------|-----------------------------------|------------------------|--------|-------------|--------|---------|--------------|----------|------------------|----------|----------|
| - Cars in Operation -              |                  |                |                  |                 |                                   |                        |        |             |        |         |              |          |                  |          |          |
| 1                                  | 26               | 15             | Urban            | N.Y. City       | 28 & 29 St. Ry.                   | 23                     | 40,000 | 3.5         | 2      | A/B     | 100          | \$ 5,700 | \$2,600          |          |          |
| 1                                  | 26               | 15             | Suburban         | Wash. D.C.      | Bal. & Wash. Co.                  | 9                      | 11,000 | 5.5         | 2      | A/B     | 110          | 5,000    | 2,300            |          |          |
| 1                                  | 40               | 30             | Steam            | Montandon       | Penn. Ry. & Co.                   | 16                     | 45,000 | 3.0         | 4      | A/B     | 200          | 10,000   | 4,000            |          |          |
| 1                                  | 26               | 15             | Urban/Steam      | Long Island     | Long Island R.R.                  | 7                      | 15,000 | 1.5         | 2      | A/B     | 118          | 6,000    | 2,300            |          |          |
| 1                                  | 26               | 25             | Interurban       | "               | Patchogue                         | "                      | 6      | 19,000      | 4.8    | 2       | A/B          | 110      | 5,500            | 2,300    |          |
| 1                                  | 26               | 25             | "                | "               | " L.I.                            | "                      | 5      | 15,000      | 4.8    | 2       | A/B          | 110      | 6,000            | 2,300    |          |
| 1                                  | 26               | 15             | Urban            | Concord N.C.    | Salisbury & Sponcor Ry. Co.       | 7                      | 22,000 | 6.8         | 2      | A/B     | 100          | 6,250    | 2,000            |          |          |
| 1                                  | 26               | 15             | Suburban         | Charlotte       | Charlotte Rapid Transit Co.       | 2                      | 6,000  | 5.0         | 2      | A/B     | 100          | 6,250    | 2,000            |          |          |
| 1                                  | 45               | 35             | Interurban       | Chualar         | Peoples El. Ry. Co.               | 3                      | 18,000 | 7.0         | 4      | A/B     | 200          | 9,950    | 4,000            |          |          |
| 1                                  | 32               | 30             | "                | New Castle Del. | N.C. & Del. City Tract. Co.       | 1/30                   | ---    | 7.0         | 4      | A/4     | 200          | 9,000    | 2,700            |          |          |
| 2                                  | Inspection       | 4              | 15               | Inspection      | Arqupa, Penn.                     | Mill Hiroto Ry. Co.    | -      | ---         | -      | A/4     | 40           | 2,000    | 540              |          |          |
| TOTAL -                            |                  |                |                  |                 |                                   |                        |        |             |        |         |              | 190,000  |                  | \$71,550 | \$28,740 |
| - Cars in Course of Construction - |                  |                |                  |                 |                                   |                        |        |             |        |         |              |          |                  |          |          |
| 1                                  | 26               | 15             | Urban            | Concord         | Salisbury & Sponcor Ry. Co.       |                        |        | 6.8         |        | A/B     | 100          | 6,250    | 2,000            |          |          |
| 1                                  | 26               | 15             | "                | Charlotte       | Charlotte Rapid Tran. Co.         |                        |        | 5.0         |        | B/B     | 100          | 6,250    | 2,000            |          |          |
| 1                                  | 26               | 18             | "                | Billings        | Billings Traction Co.             |                        |        | 2.5         |        | A/B     | 110          | 6,700    | 2,300            |          |          |
| 1                                  | 26               | 18             | "                | "               | " Mont.                           |                        |        | 2.5         |        | A/B     | 110          | 6,700    | 2,300            |          |          |
| 1                                  | 26               | 18             | "                | Hendersonville  | Hendersonville Tract. Co.         |                        |        | 3.0         |        | A/B     | 100          | 6,500    | 2,000            |          |          |
| 1                                  | 26               | 18             | Suburban         | Rock Hill       | Carolina Traction Co.             |                        |        | 1.5         |        | A/B     | 100          | 6,500    | 2,000            |          |          |
| 1                                  | 26               | 18             | "                | "               | "                                 |                        |        | 1.5         |        | A/B     | 100          | 6,500    | 2,000            |          |          |
| 1                                  | 40               | 30             | Interurban       | Ephrata, Pa.    | Ephrata & Lebanon St. Ry. Co.     |                        |        | 4.0         |        | A/B     | 200          | 11,150   | 4,000            |          |          |
| 1                                  | 26               | 15             | Urban            | Kioto, Japan    | Municipal                         |                        |        | 2.0         |        | A/B     | 100          | 6,150    | 2,000            |          |          |
| 1                                  | 26               | 18             | "                | Glasburne       | "                                 |                        |        | 2.0         |        | A/B     | 105          | 6,500    | 2,700            |          |          |
| 1                                  | 26               | 18             | "                | "               | " N.Z.                            |                        |        | 2.0         |        | A/B     | 105          | 6,500    | 2,700            |          |          |
| 1                                  | 40               | 35             | "                | Melborne        | Government Steam                  |                        |        | 2.0         |        | A/B     | 200          | 12,000   | 4,200            |          |          |
| 1                                  | 26               | 18             | "                | "               | " Aus.                            |                        |        | 3.0         |        | A/B     | 110          | 6,500    | 2,300            |          |          |
| 1                                  | 40               | 30             | Interurban       | Muskogee        | Peoples El. Ry. Co.               |                        |        | 7.0         |        | A/B     | 200          | 12,500   | 4,000            |          |          |
| 1                                  | 40               | 30             | "                | "               | "                                 |                        |        | 7.0         |        | A/B     | 200          | 12,500   | 4,000            |          |          |
| 1                                  | 26               | 16             | "                | Maryland        | Towson & Cockeysville El. Ry. Co. |                        |        | -           |        | A/B     | 115          | 6,500    | 2,350            |          |          |
| TOTAL -                            |                  |                |                  |                 |                                   |                        |        |             |        |         |              | 213,000  |                  | \$28,280 |          |
| - Pending Execution of Contract -  |                  |                |                  |                 |                                   |                        |        |             |        |         |              |          |                  |          |          |
| 1                                  | 40               | 35             | Steam            | Montandon       | Pennsylvania Railroad             |                        |        | 3.0         |        | A/B     | 200          | 12,500   | 4,000            |          |          |
| 1                                  | 40               | 35             | Interurban       | Long Island     | Duffolk Traction Co.              |                        |        | -           |        | A/B     | 200          | 10,000   | 4,000            |          |          |
| 1                                  | 35               | 30             | "                | "               | "                                 |                        |        | -           |        | A/B     | 200          | 10,000   | 4,000            |          |          |
| 1                                  | 40               | 35             | "                | "               | "                                 |                        |        | -           |        | A/B     | 200          | 10,000   | 4,000            |          |          |
| 1                                  | 40               | 35             | "                | "               | "                                 |                        |        | -           |        | A/B     | 200          | 10,000   | 4,000            |          |          |
| 1                                  | 40               | 35             | "                | "               | "                                 |                        |        | -           |        | A/B     | 200          | 10,000   | 4,000            |          |          |
| 1                                  | 40               | 35             | Steam            | Cuba            | United Railways of Havana         |                        |        | -           |        | A/B     | 210          | 13,500   | 4,200            |          |          |
| 1                                  | 40               | 35             | "                | "               | "                                 |                        |        | -           |        | A/B     | 210          | 13,500   | 4,200            |          |          |
| 1                                  | 40               | 35             | "                | "               | "                                 |                        |        | -           |        | A/B     | 210          | 13,500   | 4,200            |          |          |
| 1                                  | 40               | 35             | "                | "               | "                                 |                        |        | -           |        | A/B     | 210          | 13,500   | 4,200            |          |          |
| 1                                  | 50               | 40             | Steam            | Minnesota       | Chicago & Northwestern            |                        |        | -           |        | A/B     | 400          | 24,000   | 10,400           |          |          |
| 1                                  | 50               | 40             | "                | "               | "                                 |                        |        | -           |        | A/B     | 400          | 24,000   | 10,400           |          |          |
| 1                                  | 40               | 40             | Steam            | New York State  | New York Central R.R.             |                        |        | -           |        | A/B     | 220          | 15,000   | 5,700            |          |          |
| 1                                  | 40               | 40             | "                | "               | "                                 |                        |        | -           |        | A/B     | 220          | 15,000   | 5,700            |          |          |
| 1                                  | 26               | 15             | Interurban       | Oregon          | Lovegrove Lumber Co.              |                        |        | -           |        | A/B     | 100          | 6,000    | 2,000            |          |          |
| 1                                  | 40               | 40             | Steam            | Long Island     | Long Island R.R.                  |                        |        | -           |        | A/B     | 210          | 12,500   | 4,500            |          |          |
| TOTAL -                            |                  |                |                  |                 |                                   |                        |        |             |        |         |              | \$13,000 |                  | \$1,280  |          |

# indicates cars second hand and used, for six to twelve months, before being resold.  
 = indicates repeat orders.

Cars in Operation - \$71,550  
 Cars in Course of Construction - 128,000  
 Cars Pending Execution of Contract - 213,000

Total - \$410,550 \$30,280

*Dist. - Beach*

AS EVIDENCE OF THE EXCELLENCE OF THESE CARS, MR. EDISON HAS GIVEN TO US THE RIGHT TO THE EXCLUSIVE USE OF HIS STORAGE BATTERY FOR TRACTION PURPOSES

**FEDERAL STORAGE BATTERY CAR COMPANY**

MANUFACTURERS OF  
**BEACH CARS**

EQUIPPED WITH  
**EDISON STORAGE BATTERIES**

EXPRESS:  
UNITED STATES EXP., BLOOMFIELD, N. J.

FREIGHT:  
ERIE, R. R., SILVER LAKE, N. J.

TELEGRAPH:  
NEWARK, NEW JERSEY

CABLE:  
FEEBAGAN, NEWARK, NEW JERSEY

GENERAL OFFICE AND WORKS: FRANKLIN STREET, NEAR BELMONT AVENUE  
TELEPHONE: 3123 BRANCH BROOK

SILVER LAKE, NEW JERSEY      December 22, 1911.

Mr. Thomas A. Edison,  
Orange, N. J.

My dear Mr. Edison:

*W. G. B. 10/23/11*

I beg to advise you that at the meeting of the Executive Committee of the American Railway Engineers Association on the 17th and 18th of October, the letter which you wrote the President of the American Street Railway Association was read. It had been referred to the Engineering Association by the American Railway Association; the minutes of this meeting contain the following:

Storage Battery Cars.—This subject was suggested by the American Association and as the committee thought there was a wide field for self-propelled cars as feeders and in the development of new territory, a motion was made and carried that the subject of self-propelled cars be referred to the Equipment Committee with instructions to prepare a resume of experiences of actual installations up to date.

It would be of interest to you to know that some members of this Association who are not manufacturers of Storage Batteries or cars tried to sidetrack this and to have your letter smothered but some personal friends of mine insisted that the thing be brought out and a committee appointed to make a report with the result that it was brought forward and the Association have appointed a committee to make a thorough examination and report in time for the next annual meeting of the Street Railway Association. All this will go into their various publications.

Yours very truly,

*R. H. Beach*  
President.

B/W

**Edison General File Series**

**1911. Battery, Storage - Foreign - General (E-11-20)**

This folder contains correspondence and other documents relating to the commercial development of Edison's alkaline storage battery in countries other than the United States and Canada. Most of the letters concern administrative changes in the European battery business. Included are letters to the banking houses of J. P. Morgan & Co. in New York and Morgan, Harjes & Co. in Paris in which Edison discusses his lack of confidence in longtime associate Sigmund Bergmann, head of the Deutsche Edison-Akkumulatoren-Co. in Berlin. Other letters concern the appointment of John F. Monnot, a friend of Miller Reese Hutchison, as agent for France and England. A few documents pertain to the use of batteries in French submarines. There is also a list of Edison's patents for storage batteries and the cost of working them in countries other than the United States and Canada. Among the correspondents are H. W. Balk, who solicited the market rights for Edison's storage batteries in Cuba and Ceylon; longtime Edison associate Samuel Insull; consulting engineer Horace F. Parshall; and Willis N. Stewart, an electric light agent in South America during the 1880s.

Approximately 70 percent of the documents have been selected. Among the items not selected are promotional material published by Berliner Electromobil-Fabrik, GmbH; unsolicited correspondence; and duplicates.

SB-England

**HARRIS & SAMUELS,**  
Managers and Sole Concessionaires  
in the United Kingdom for  
The Rhineland Manufacturing Co.'s Ball Bearings,  
Eyquem's Patents; Motor & Aeroplane Accessories.



10, DEAN STREET, OXFORD STREET,  
LONDON, W9th. January 1911

Telephone: GERRARD 2864.  
Telegrams & Cables: "POSITIVELY, LONDON."  
Codes: A.B.C. 5th Edition & Liebers.

|           |         |
|-----------|---------|
| Our ref.  | H/HS/2. |
| Your ref. |         |

Thomas A. Edison, Esq.,  
Orange, N.J.,  
U. S. A.

Dear Sir,

We have an enquiry for your Accumulators, and shall be glad to know whether you are represented in this country for them. If so, we shall be glad to have the name of the firm who is handling them; and if not, we should like to have full particulars from you, and should be pleased to know whether you are open to consider making arrangements with us to represent you for same; if so, we shall be glad to receive particulars as to terms, etc.

Yours faithfully,

*Harris Samuels*

*Ans 1/30/11*

*Our ref. not repeated  
at present I must  
purposely disregard  
the terms of the Ad  
and later try to  
arrange in City to  
send present the  
wishes of the  
the length of a  
change in the  
to allow us to  
a large quantity  
9*

*Rev. Ray*

**HARRIS & SAMUELS,**  
Managers and Sole Commissionaires  
in the United Kingdom for  
The Rhineland Manufacturing Co.'s Ball Bearings,  
Eyquem's Patents; Motor & Aeroplane Accessories.



10, DEAN STREET, OXFORD STREET,  
LONDON, W. 7th. February 1911

Telephone: GERRARD 8864.  
Telegrams & Cables: "POSITIVELY, LONDON."  
Codes: A.B.C. 5th Edition & Libbers.

|           |       |     |
|-----------|-------|-----|
| Our ref.  | HHS/S | -2- |
| Your ref. |       |     |

*Any that we understand that shipping to America into England will be the patent We cover supply batteries for London*

H. F. Miller, Esq.,  
Secretary to:-  
Thomas A. Edison, Esq.,  
O R A N G E, N. J.

*Ans 7/18/11*

Dear Sir,

We are in receipt of your favour of the 30th. ult., with regard to Mr. Edison's Storage Battery.

We note that you are at present developing a trade in the United States, and later you will open a Factory in England. We trust you will bear us in mind if then we can be of service to you in placing same on the English market.

In the meantime, we should like to ask, until the Patent Law in England forces you to manufacture it over here, if we could not handle in this country for you the Batteries you are making in the States. In this way the trade could be worked up over here, and the erection of the Factory in England could be left over until the trade warranted it.

The reason that we wrote you on the matter in

From HARRIS & SAMUELS,  
LONDON.

CONTINUATION SHEET No: 1

Date 7th. February, 1914

To H. F. Miller, Esq.,

the first place was on account of an enquiry we had from  
some Indian clients of ours.

Yours faithfully,

Harris Samuels

Edison Battery Sales

February 20, 1911.

Dear Mr. Edison,

I have received a letter from my friend Mr. Monnot, of Paris, whom I brought out to the Lab. for the purpose of negotiating with you for the privilege of manufacturing or selling the Edison Battery in France. You will remember you decided you could not sell them there in the present stage of the patent situation.

He writes as follows, which I quote from his letter:

"I recently met and talked with the late manager of Bergman's French branch and he tells me Bergman has been selling the Edison Battery in France for some time and is trying to push it. He the manager, sold a stationary outfit to Tiffany, altho he does not think the Edison cell as well adapted to such work as the lead. Bergman has also sold some of the Edison cells for use in French submarines, but their use was not a success as they were not designed for such requirements. Bergman has not sold very many cells in France, however. His principle market has been in Germany. He has been making the old type battery, and two gentlemen who visited him there recently tell me he has a large number on hand which he is unable to sell. These two gentlemen say they are going to be the Spanish Agents for the sale of Edison battery and went to see Bergman to find out how he is making out. I do not know if Mr. Edison is posted on this situation. He certainly was not when I talked with him, as he positively stated Bergman was only licensed to make and sell in Germany, and would not entertain a proposition from me to take the matter up in France, because of the patent situation. I cannot see how Bergman can ship into France without danger of damage to the patent situation any more than Mr. Edison can. Please see Mr. Edison and ascertain if he is now ready to take up the French business as I stand ready with money and energy to push it. If he isnt ready, it seems to me he should certainly become familiar with what is going on, but I leave it to your better judgment to decide and act accordingly. Please let me hear from you as soon as you have talked with Mr. Edison, if you decide to. J. F. Monnot."

I have no interest in the matter other than to further your interests, which I always stand ready to do. I would suggest, however, inasmuch as I am handling the Navy situation, that the water be not muddied up in Europe as, because of the opposition I am meeting from the Lead Battery interests, I have got to handle this situation very diplomatically and dont want well meaning but misdirected efforts to make it any more difficult than I will find it. So wont you please write Bergman, telling him I am handling this end, and suggesting that he state this when approached by representatives of Foreign Navies. We of course expect to take care of Bergman in Germany and Austria sales, but he had better let me handle the situation from this end.

Sincerely,



LONDON.

BERLIN.

BRUSSELS.

TURIN.

MADRID.



LE KLAXON

# THE KLAXON CO., LTD.

## WARNING SIGNALS

JFM/ALX.

31, RUE DARU



LE KLAXONET

PARIS, 28th. April. 1911.

TELEGRAPHIC ADDRESS  
 TONNOM-PARIS  
 (LISSENS & WEEVERAN 5809, 6068)

TELEPHONE 593-20

Mr. Miller Reese Hutchinson,  
 c/o. The Edison Storage Battery Co.,  
 ORANGE N.J.

My dear Hutch,

I just returned from London and in talking to a friend about the Edison battery he told me that he had just met the day before a London broker who showed him a small prospectus for raising the money for introducing the Edison battery in England. He stated that this business had been brought to him by a man who had worked a long time with Edison and that they were raising £50,000 to purchase from the States a storage battery bus for London and make a demonstration in view of forming a larger company for building them in England. By what Mr. Edison told us at the last interview we had, I did not think that he has authorized anybody for doing so and I leave it to your judgement if it is policy for doing so and I call it to his attention. I did not have time to investigate the matter before I left London but will get the name of the broker, which I forgot, and try to get the name of the man who says he has worked with Edison and introduced this business.

In view of these facts I have called this morning on Morgan, Harjes & Co. with the letter of introduction Mr. Edison gave me last December. Mr. Harjes was not there but I was received by Mr. Herold and Mr. Waddington who are the active heads of the firm in Paris. They received me very kindly and were particularly interested with my call. Mr. Waddington has seen several times Mr. Edison and has been following the development of his storage battery. They have followed also what Bergman has done in Germany and the son of Mr. Herold is with the German company as Chemist and has been a few weeks in Orange at the laboratories for studying the process for making the chemicals for the battery. They told me that they manufactured these chemicals in Germany although I understood from

Mr. M.R. Hutchison.

-2-

88/4/11.

Mr. Edison that he was shipping same to them. Mr. Herold ~~is~~ is very enthusiastic on the possibility of the new Edison battery and his father has offered to give me a letter of introduction to him when I go to Berlin. They are certainly much interested in the battery for the French market and I went to them to show them what could be done in controlling the electric traction in France. They knew a lot about this and understood perfectly my points and told me that they were ready to go into this business and had for years tried to get it from Mr. Edison, but that he always told them that he was not ready and to wait. They were very pleased to have my call and talk about the matter as they were thinking themselves of approaching Edison himself on this matter. I told them that Mr. Edison had allowed me to go ahead on the selling end of it here but they told me that this would not do as the battery would have to be manufactured in France to be able to get business for the city and suburban lines as well as for the Government, that they are convinced that there is enough market here to warrant manufacturing and they would be willing to organize a company to that effect on the plans I have outlined to them; - should Mr. Edison agree to it and make me his conditions either for a royalty or for an interest in the company. I am writing to Mr. Edison a letter, which I enclose, leaving to you the care of talking the other points so as to make him understand the necessity for him to enter into an agreement for the French end of his business.

On another hand, it will be necessary for the making end of the business to have the battery manufactured in France as otherwise it would be impossible to get the French Government to take it up. Mr. Herold told me that the German Edison Battery Co. had furnished 1 battery for a French submarine but it was impossible for them to get another order. On another hand the duty in France, which is not prohibitive now, would be certainly raised by the French authorities as soon as the battery would be imported in large quantities and Mr. Herold and Mr. Waddington think that Mr. Edison would not be protected for going into the French market on a large scale ~~for manu-~~ facturing here. Although the storage battery may be the best thing for submarines the French Government will not buy it, except for a test, if not manufactured in France. I am convinced, and Mr. Herold is also, that there is quite an important business to be done here although Mr. Edison did not think so. If Mr. Edison is coming over here, as he says, in July you ought to try to prepare him to take a decision in this matter while he is here if you cannot succeed in having him to do so before.

~~W. R. Hutchinson~~

88/4/11.

As to the English end of the storage battery, Mr. Harold told me that he would give me a letter of introduction to take it up with their English firm and that probably they would take it up also for that market, but I wish you would impress on Mr. Edison that if he will authorize me to negotiate his business for France and England, I can do so to our mutual advantage.

I just received this morning a letter from my Berlin friend saying that the Director of the Siemens-Schuckert works telephoned him that the mirror was ready for shipment but inasmuch as they have very stringent arrangements to not furnish these mirrors for foreign countries, if they were to be used for optical purposes, they ask me to sign a statement that it will not be used for said purpose. This blocks our way entirely and I can see that it would be practically impossible to get any other mirrors, even if I can secure this one. I do not want to put my friend in a bad position with the Schuckert people, with whom he is very friendly, and if they will not give it to him without any restriction I will not ship it to the United States. As I wrote you in my last letter, I think these mirrors could be secured from the Austrian manufacturers who are making them for the German General Electric and I will investigate this end. I do not see why they cannot furnish us with as good a mirror as the Schuckert people. There cannot be any patent on same, it must only depend on the quality of the cristal used.

Awaiting your news, I remain with kind regards,

Yours sincerely,

*J. G. Munnich*  
PRESIDENT.

Enclosed.  
Letter for Mr. Edison.

LONDON.

BERLIN.

BRUSSELS.

TURIN.

MADRID.



LE KLAXON

# THE KLAXON CO., LTD.

## WARNING SIGNALS

SEWALD.

31, RUE DARU



LE KLAXONET

PARIS, ~~1888~~ 19 ~~1900~~

TELEGRAPHIC ADDRESS  
**TONNOM-PARIS**  
(LETTERS & WESTERN UNION CODES)

TELEPHONE 592-20

Mr. Thomas A. Edison,

ORANGE, N.J.

Dear Mr. Edison,

I just called to-day on Messrs. Morgan, Harjes & Co. re your storage battery. Mr. Harjes was not there but I was received by Mr. Herold and Mr. Waddington, who had the pleasure of seeing you several times in the past.

They are very interested in your battery and told me that they were very pleased to receive me as they have been waiting for you on this matter. The son of Mr. Herold is with the German Edison Battery Co. and his father told me that he had spent several weeks in your laboratory on the chemical end of your battery. He is very enthusiastic about your new battery.

I told Mr. Herold that you did not propose to manufacture in France, but he immediately showed me that this would certainly be a great mistake as it would be impossible to secure the orders for the city and suburban cars as well as the orders for the French Government. On another hand if we were imposing the battery here on a large scale the French authorities would certainly raise the actual duty and make the price of it prohibitive. As I told you, and Mr. Herold and Mr. Waddington confirm me in my opinion, there is certainly enough market to be developed here to warrant manufacturing and these gentlemen are willing to organize a company with us, for taking off the manufacturing from your hands, either on a royalty or on an interest in said company.

One of the most important uses of your new battery is for submarines; you will therefore see the necessity of making some satisfactory arrangement for the manufacture here, as I was told by Mr. Herold that the German company had tried to get

Mr. Thomas A. Edison.

-8-

22/6/13.

orders from the French Government for this purpose and only could supply a test battery and are unable to secure a second order. It is an absolute rule in France that everything approved in public, city or government workshops to be of French manufacture.

I am asking my friend, Mr. Hutchinson, to give you this letter and to inform you of other points about which I have written him. I hope you will give your best consideration to the above and let me know your views in the matter.

When you come to Paris next July I will have everything arranged for you as you told me, if you will let me know exactly the date of your arrival before hand.

Awaiting the pleasure of seeing you again and hoping that you are in good health, I beg to remain,

Yours sincerely,

  
PRESIDENT.

50- France  
C.

J. P. MORGAN & CO.  
Wall Street Bldg.  
New York.  
DREXEL & CO.  
Philadelphia.  
MORGAN, GRENPELL & CO.  
London.  
MORGAN, HARJES & CO.  
Paris.

*Ans  
57911911  
Garn*

*Say* New York, May 6th, 1911.

Thomas A. Edison, Esq ..  
Llewellyn Park,  
Orange,  
New Jersey.

~~I understand you are referred to  
the Edison Storage Battery in France  
I have of the 6th of May at  
Paris I will be in town this  
week or will call & see your  
honorable father.~~

Dear Sir:-

We are in receipt of a letter from our Paris house,  
Messrs. Morgan, Harjes & Co., in regard to the Edison Storage Battery.

They ask us to ascertain from you if, and under what conditions,  
you would entertain the exploitation of your patent in France. They  
are informed that you will be in Paris in July next but would be glad  
to have the matter talked over beforehand.

We shall be glad to see you upon this subject, should you be in  
town, or to hear from you what your views may be in the matter.

Yours very truly,

*J. P. Morgan*

*J. P. Morgan*

*British Foreign*

*Edison*  
May 2, 1911.

Mr. Dyer:-

I hand you herewith a list of foreign storage patents, together with the cost of maintaining them until their expiration in taxes. I have not put down the total cost of the workings, owing to the fact that we do not work the patents in all countries at present.

I did not include the Canadian patents in this list.

F. J. Lewis.

FDL-JS

*Cost tax for the next 12 months*  
*5616.00*

[ATTACHMENT/ENCLOSURE]

C O M P L E T E  
L I S T O F F O R E I G N S T O R A G E B A T T E R I  
P A T E N T S



*Mr. Brown*

Storage Battery, Feb. 5, 1901 (Claims)

1. A reversible galvanic battery or accumulator containing an alkaline electrolyte and employing in the make up of one of its electrodes an active element consisting of the hydrated oxide of nickel or cobalt, contained in a closed receptacle under permanent pressure, capable when subjected to a charging current of being raised to a higher stage of oxidation electrolytically, and which higher hydrated oxides revert to the lower stage by reduction with extreme ease so as to give up oxygen.

2. A reversible galvanic battery or accumulator containing an alkaline electrolyte and employing in the make up of one of its electrodes finely divided electrolytically active oxide of iron capable when subjected to a charging current of being reduced to the metallic state, and from that condition of being electrolytically oxidized on discharge when opposed by a suitable depolarizer within the electrolyte.

3. An active element for a reversible galvanic battery or accumulator, consisting of a hydrated lower oxide of iron produced by electrolytic action on iron monosulphide and capable of being electrolytically reduced to the metallic state when opposed by a suitable electrode in an alkaline electrolyte.

4. A reversible galvanic battery or accumulator characterized by the employment of finely divided electrolytically active iron or finely divided electrolytically active oxide of iron, as one of the elements, and a hydrated oxide of nickel or cobalt as the other element, both immersed in an alkaline electrolyte.

5. In a reversible galvanic battery or accumulator employing the elements hereinbefore specified, a metallic electrode therefor, the exposed surface of which is unaffected by electrolytic action in the solution employed, said electrode being in the form of a closed receptacle having one or more walls provided with perforations therein produced by displacing the metal so that the burr surrounding each opening will project inwardly, and the active material maintained under pressure in said closed receptacle so as to be always completely confined thereby.

6. In a reversible galvanic battery or accumulator, an element therefor employing a finely divided active material admixed with flake graphite the electrolyte used being one in which both the active material and the graphite will be practically insoluble.

| Country                 | Volts | Expn | Rest<br>In use | Cost of<br>Working | Power<br>Consumption<br>Expn | Remarks                |
|-------------------------|-------|------|----------------|--------------------|------------------------------|------------------------|
| England                 | 49    | 1905 | 575.50         | None               | 222.50                       |                        |
| France                  | 50    | 1916 | 26.00          | 30.00              | 84.00                        |                        |
| Belgium                 | 51    | 1901 | 26.00          | 25.00              | 216.00                       |                        |
| Holland                 | 52    | 1916 | 26.00          | —                  | 150.00                       |                        |
| Germany                 | 52    | 1916 | 65.00          | 30.00              | 422.00                       |                        |
| Italy                   | 53    | 1916 | 26.00          | 30.00              | 145.00                       |                        |
| Austria                 | 57    | 1917 | 29.00          | 30.00              | 625.00                       |                        |
| Germany                 | 125   | 1916 | 146.50         | —                  | 644.00                       |                        |
| Spain                   | 72    | 1901 | 26.00          | 15.00              | 340.00                       |                        |
| Japan                   | 87    | 1917 | 25.00          | 50.00              | 120.00                       |                        |
| India                   | 86    | 1916 | 30.00          | —                  | 240.00                       |                        |
| Victoria                | 71    | 1915 | 70.00          | —                  | —                            | Pay due 1912           |
| <b>Nickel Electrode</b> |       |      |                |                    |                              |                        |
| Australia               | 56    | 1916 | 26.00          | —                  | 150.00                       | Revised one of 1916 54 |
| Germany                 | 143   | 1916 | 146.50         | —                  | 644.00                       | " " " 125              |
| <b>Iron Electrode</b>   |       |      |                |                    |                              |                        |
| Australia               | 55    | 1916 | 26.00          | —                  | 150.00                       | Revised one of 1916 54 |
| Australia               | 147   | 1918 | —              | —                  | —                            | " " " 97               |
| <b>Flake Graphite</b>   |       |      |                |                    |                              |                        |
| Germany                 | 142   | 1916 | 70.00          | —                  | 440.50                       |                        |
| Sweden                  | 149   | 1917 | 17.00          | —                  | 182.00                       |                        |
| Australia               | 98    | 1919 | 52.50          | 30.00              | 875.00                       |                        |

[ATTACHMENT/ENCLOSURE]

Mechanical Construction, May 21, 1901 (Claims)

1. A reversible galvanic battery of the type employing an alkaline electrolyte, whose negative electrode or oxidizable element is characterized by the employment of anhydrous ferrous oxide which is reducible to the metallic state electrolytically.

2. An improved reversible galvanic battery employing an alkaline electrolyte and characterized by the use, in the makeup of its positive pole electrode, of a depolarizer consisting of a non-colloidal hydrated oxide of nickel, as distinguished from the colloidal form of such oxide produced by the usual methods.

3. A reversible galvanic battery employing perforated receptacles as explained for holding the active material of the electrodes, and characterized by the admixture with the active material of flakelike non-active conducting material, such as micaceous graphite, the particles of which are larger in size than the perforations in the receptacle, the surface of such flakes being coated with the finely divided active material by pressing the two materials together while in a plastic state and in such a manner that the size of the flakes shall not to any extent be diminished to enable them to pass through such perforations, and the relative proportion of the two materials being such that substantially all of the active material will be in electrical contact with the surface of the conducting flakelike material.

4. An improved reversible galvanic battery employing an alkaline solution and characterized by the use of perforated receptacles for containing either of the active materials or for separately containing both of the active materials, which are sustained within the receptacle under pressure, the receptacle being made of an elastic metal such as spring steel, nickel-plated or not as may be desired, the elasticity of the walls of the receptacles being so proportioned relatively to the expansive and contractive tendencies of the active material that any increase or diminution in the bulk of the active material shall be included within the elastic limits of such walls, so that continuous contact will be maintained between the active material and the containing receptacles, regardless of expansion or contraction of the active material.

5. An improved reversible galvanic battery having the general characteristics above recited and further characterized in that each perforated receptacle is crimped around the edges of an appropriately shaped opening in a suitable supporting grid or plate, as set forth.

6. An improved reversible galvanic battery having the before-recited characteristics and further characterized by the corrugating of the outer walls of the metal receptacles to increase the strength thereof and thereby permit the use of thinner material.

7. An improved reversible galvanic battery having the before-recited characteristics and further characterized by making the receptacles of two cups or sections, one having deeper sides than the other, so that when the sections are subjected to compression to crimp them in position in the supporting grid or plate, the deeper walls of the first section will be crimped over upon the bottom of the other section to lock the sections rigidly together and to the grid or plate, as set forth, and each cup being formed from blanks cut from a perforated metallic ribbon having imperforated margins, the side edges of each cup being located outside of the perforations.

| Country     | Sold | Expire | Real<br>value | Cost of<br>Working | Income<br>from<br>Expire | Remarks                      |
|-------------|------|--------|---------------|--------------------|--------------------------|------------------------------|
| England     | 62   | 1916   | 1750          | —                  | 20200                    |                              |
| France      | 63   | 1916   | 2100          | 3000               | 8400                     |                              |
| Belgium     | 64   | 1921   | 2600          | 2600               | 31600                    |                              |
| Netherlands | 65   | 1916   | 2600          | 2000               | 15000                    |                              |
| Italy       | 66   | 1916   | 2600          | 3000               | 146700                   |                              |
| Germany     | 67   | 1916   | 12900         | —                  | 77800                    |                              |
| Spain       | 74   | 1921   | 2600          | 1600               | 26000                    |                              |
| Portugal    | 123  | 1918   | 6120          | 3000               | 73400                    |                              |
| Switzerland | 137  | 1916   | 6600          | 3000               | 46200                    |                              |
| Japan       | 188  | 1917   | 2600          | 5000               | 12000                    |                              |
| India       | 75   | 1915   | 3000          | —                  | 18000                    |                              |
| Sweden      | 126  | 1916   | 1700          | —                  | 19980                    |                              |
| Australia   | 145  | 1919   | 1250          | 3000               | 79900                    | Electric Containers China 67 |



[ATTACHMENT/ENCLOSURE]

Complete Cell, Jan. 6, 1903 (Claims)

1. A receptacle for a storage battery, having horizontal corrugations not extending to the corners of the receptacle to strengthen the receptacle against compressing and expanding strains, substantially as set forth.
2. In a storage battery, the electrode plates mounted on insulating bars having saw slots for receiving the electrode plates, substantially as set forth.
3. In a storage battery, the side separators having slots for receiving the electrode plates for properly spacing the latter, substantially as set forth.
4. The gastight insulating joint through which passes the conductor from the electrode plates, as shown in Figure 3, substantially as set forth.
5. The perforated diaphragms in the cell above the solution for effecting a separation of mechanically entrained globules from the gases generated when the charging is sufficient to cause the solution to froth or foam to cover the diaphragm with a film, substantially as set forth.
6. The check-valve 49 or its equivalent for permitting a gas pressure to be created in an otherwise sealed receptacle for storage batteries and to automatically permit of a discharge of the gases and mechanically entrained globules at such a high velocity as to overcome the surface tension of a liquid film to cause the globules to coalesce therewith and be thereby separated from the escaping gases, substantially as set forth.
7. The gauze surface 52 or its equivalent, through which the escaping gases pass and by which oxidation of the gases within the cell is overcome, substantially as set forth.
8. The deflector 53 for diffusing or attenuating the gases before their discharge through the gauze diaphragm, substantially as set forth.
9. The insulating separating sheets 37 between the electrodes with perforations arranged in lines between the masses of active material, substantially as set forth.
10. Making the pockets or receptacles for containing the active material with concave walls, substantially as set forth.
11. Securing the mass or briquette of active material within one of the sections of the top pockets or receptacles by a turned-over edge of the latter directly engaging the active material, substantially as set forth.
12. The crate or tray containing a plurality of storage batteries mechanically held therein and insulated from each other both at the top and bottom, substantially as set forth.
13. The insulating locks 86, as shown in Figure 11, for holding the cells in position within the crate or tray and for insulating them at their upper ends, substantially as set forth.
14. The multiple compressing dies, as shown in Figures 5 to 17, employing a layer of yielding non-compressible material like rubber between the press plunger and the independent dies for applying a uniform pressure to all dies without affecting the capacity of the dies to move independently of one another, substantially as set forth.
15. An oxidizable electrode on discharge for a storage battery, containing in its makeup electrolytically-active cobalt or oxide thereof, substantially as set forth.
16. For addition to the iron, cobalt or other oxidizable material on discharge, in a storage battery using an alkaline electrolyte, a readily reducible metal, such as mercury or copper or silver, or a combination of mercury and copper and silver, or of mercury and copper, or of mercury and silver, or of copper and silver, for the purpose of preserving electrical contact between the active particles as well as to permit the electrode to sustain a high voltage through the whole period of discharge, substantially as set forth.

[ATTACHMENT/ENCLOSURE]

(continued)

17. Locking the electrode plates of a storage battery within the enclosing receptacle to prevent the electrode plates from moving or shifting longitudinally, as and for the purposes set forth.
18. Manufacturing electrolytically-active finely divided iron by reducing iron oxide in a closed retort by hydrogen gas, after which the reduced iron is permitted to cool while still surrounded by the gas to prevent the spontaneous oxidation, followed by the introduction into the retort of water to expel the gas and make the reduced iron non-pyrophoric.

| Country      | Patent No. | Expire | Real Inval. due | Working                                        | Start before Expire | Remarks                                 |
|--------------|------------|--------|-----------------|------------------------------------------------|---------------------|-----------------------------------------|
| Belgium      | 173        | 1917   | 22.50           | —                                              | 262.50              |                                         |
| Bulgaria     | 174        | 1923   | 20.00           | 25.00                                          | 810.00              |                                         |
| Bahia        | 175        | 1918   | 21.00           | 30.00                                          | 127.00              |                                         |
| Spain        | 176        | 1918   | 21.00           | 30.00                                          | 192.00              |                                         |
| India        | 177        | 1917   | 30.00           | —                                              | 180.00              |                                         |
| Spain        | 179        | 1923   | 19.00           | 15.00                                          | 403.00              |                                         |
| Switzerland  | 180        | 1918   | 22.00           | —                                              | 196.00              |                                         |
| Japan        | 182        | 1918   | 20.00           | 50.00                                          | 158.00              |                                         |
| Ohio S. Mts. | 183        | 1918   | —               | —                                              | —                   |                                         |
| Victoria     | 184        | 1918   | 20.00           | —                                              | —                   | Dec. 1914                               |
| Hungary      | 185        | 1918   | 20.00           | 30.00                                          | 529.00              |                                         |
| Sweden       | 166        | 1918   | 17.00           | —                                              | 169.20              | Revised Case (Case claim)               |
| Austria      | 159        | 1918   | 61.30           | 30.00                                          | 735.50              | " " ( " " )                             |
| Austria      | 165        | 1921   | 31.00           | 36.00                                          | 873.20              | Revised Case Addition of Mercury & Iron |
| Sweden       | 172        | 1918   | 17.00           | —                                              | 169.20              | " " " " " "                             |
| Sweden       | 189        | 1922   | 17.00           | —                                              | —                   | " " " " " "                             |
|              |            |        | (Claim 18)      | Key of Electrolytic action finely divided Iron |                     |                                         |
| Hungary      | 212        | 1918   | 26.00           | 30.00                                          | 529.00              |                                         |
| Germany      | 215        | 1918   | 104.00          | —                                              | 993.50              |                                         |
| Prussia      | 255        | 1918   | 17.00           | —                                              | 169.20              |                                         |

















[ATTACHMENT/ENCLOSURE]

Electroplating Apparatus, Dec. 10, 1904 (Claims)

1. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving a strip to be plated with respect to said support, a plating bath in which the strip is normally submerged and means for raising and lowering said support, substantially as set forth.

2. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip to be plated with respect to said support, cleaning and plating baths in which the strip is normally submerged and through which it passes successively, and means for raising and lowering said support, substantially as set forth.

3. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip with respect to said support, a cleaning tank, a cold water tank and a plating tank in which the strip is normally submerged and through which it passes successively, and means for raising and lowering said support, substantially as set forth.

4. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip to be plated with respect to said support, a plating tank and hot water tank, in which the strip is normally submerged and through which it passes successively, and means for raising and lowering said support, substantially as set forth.

5. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip relatively to the support, a cleaning tank in which the strip is normally submerged, means for raising and lowering the strip, and an enclosing chamber carried by the support and normally submerged in the solution, substantially as set forth.

6. In a continuous plating apparatus of the character described, the combination of a cold water tank, a support, means for sustaining and moving the strip to be plated relatively to the support, means for raising and lowering the strip relatively to said tank, and a spray above the tank for washing the strip, substantially as set forth.

7. In a continuous plating apparatus of the character described, the combination of a cold water tank, a support, means for sustaining and moving the strip to be plated relatively to the support, means for raising and lowering the strip relatively to said tank, and sprays above the tank for washing the strip, before and after leaving same, substantially as set forth.

8. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip relatively to the support, a plating tank, a take-up reel to which the strip is applied, a let-off reel, and means for moving the strip intermediate of the reels, substantially as set forth.

9. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip to be plated with respect to said support, a plating supporting beam, a motor, a take-up reel operated by said motor, supporting pulleys carried by the beam and over which runs the strip to be plated and connections between said motor and one of said pulleys, substantially as set forth.

10. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip to be plated with respect to the support, a hot water tank in which the strip is normally submerged and a spray for washing the strip after leaving the hot water tank, substantially as set forth.

11. In a continuous plating apparatus of the character described, the combination of a support, means for sustaining and moving the strip to be plated with respect to the support, a plating bath in which the strip is submerged and through which it passes, means for applying current to a section of the strip after leaving the plating bath, whereby said section will be heated for the purpose of drying the same, and means for regulating the length of the heated section, substantially as set forth.

















[ATTACHMENT/ENCLOSURE]

Cans and Receptacles, Dec. 10, 1904 (Claims)

1. A sheet metal receptacle for storage batteries, characterized in that the joint between the body of the receptacle and the top thereof, and preferably also, the other joints formed in the make-up of the receptacle, are welded to result practically in a one piece article, whereby said joints will not be affected by the solution.

2. A storage battery receptacle having welded joints as set forth in Claim 1, characterized in that the side faces are each formed with a depressed panel, as and for the purposes set forth.

| <i>Country</i> | <i>Pols</i> | <i>Expire</i> | <i>Test<br/>Jan 20</i> | <i>Working</i> | <i>Law -<br/>before exp.</i> |
|----------------|-------------|---------------|------------------------|----------------|------------------------------|
| <i>Austria</i> | <i>325</i>  | <i>1921</i>   | <i>27.20</i>           | <i>30.00</i>   | <i>910.40</i>                |
| <i>Hungary</i> | <i>326</i>  | <i>1919</i>   | <i>27.00</i>           | <i>30.00</i>   | <i>616.00</i>                |
|                |             |               |                        |                |                              |
|                |             |               |                        |                |                              |
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|                |             |               |                        |                |                              |
|                |             |               |                        |                |                              |



[ATTACHMENT/ENCLOSURE]

10/16/44

Division Folio 413 (Claims)

1. Process of manufacturing metal flakes adapted to be admixed to electrode masses, especially process of manufacturing flakes of cobalt or of alloys of cobalt and nickel, characterized by this that the flake-metal is electrolytically precipitated and thereafter separated from the cathode, carrying it by treating with a suitable solvent, the cathode forming the carrier for the electrolytic precipitation being provided for this purpose with a metallic coating which is soluble in the bath used for the separation of the flake-metal.

2. Process in accordance with Claim 1, characterized by this that the cobalt-flakes after breaking up to suitable size are subjected to high heat in a hydrogen atmosphere.

| <i>Country</i> | <i>Pat. Exp.</i> | <i>How can due</i> | <i>Working</i> | <i>How can before Expire</i> |                |
|----------------|------------------|--------------------|----------------|------------------------------|----------------|
| <i>Germany</i> | <i>1934</i>      | <i>1921</i>        | <i>65.00</i>   | <i>—</i>                     | <i>1217.00</i> |
|                |                  |                    |                |                              |                |
|                |                  |                    |                |                              |                |
|                |                  |                    |                |                              |                |
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|                |                  |                    |                |                              |                |
|                |                  |                    |                |                              |                |























May 8, 1911.

Mr. J. P. Monnot,  
31 Rue Daru,  
Paris, France.

Dear Ferri:

I have your letters of the 28th, addressed to Mr. Edison and myself.

I discussed the matter thoroughly with Mr. Edison after ~~him~~ having read both letters.

He wishes me to state that he has not authorized anyone to raise any money for the exploitation or manufacture of his Battery in England, and that he would not consider such a proposition at the present time.

He also says he will not consider the manufacture of the Batteries in France until the demand for them in that country warrants it. His experiences in enterprises in France have never proved remunerative. In fact, he has lost a good deal of money in that country, dating back to the time of the incandescent lamp. He says that if you can build up a business there such as will warrant the construction of a factory, he will consider it; but he much prefers for you to go ahead on the present basis and see what you can do.

As to the submarine: It is his opinion, and mine, that the French government will purchase batteries for submarines anywhere they can get them, when it has been thoroughly demonstrated to them how greatly superior they are to the lead battery. It would be a matter of expediency on the part of the government to do so, in order that they will not drop behind in this field of naval development. If they do not do so, the amount of business we shall miss from France would not cut very much of a figure, as all the rest of the governments are very eager to get the batteries, and will take up the entire output of this factory for some time. If the French government wants a sample Battery installed in a submarine, and is willing to pay for it, I shall see that they get a set. I am quite sure the result of such a test will open their eyes and change the aspect of affairs very much, as far as the necessity of manufacturing in France is concerned.

In discussing the matter as to whether the Batteries will be manufactured in France or not, you can say to the government offi-

Mr. J. F. Nonnot.

(2)

May 8, 1911.

ciala that when the demand for Batteries in France warrants the construction of a factory, such a factory will be put up, and if they do not wish to help the cause along by using the Batteries meanwhile, it cannot be helped

So please say to Messrs. Morgan, Hodge & Co., that when the time comes for the construction of such a factory, we shall not forget them or you ; but we both think it better to let the matter remain statu quo for the present.

Mr. Edison wishes me to express his appreciation of your efforts, and to say further, that he will advise as to when he expects to land, in order that the arrangements for the automobile, etc., can be made.

Yours sincerely,

Personal Representative  
of Thomas A. Edison  
in Naval Affairs.

MHR/JTB

Bat - England

*H. F. Parrshall, B.Sc., M.Inst. C.E.*  
*Consulting Engineer*

TELEGRAMS:- "PARSHALITE, LONDON."

TELEPHONE:- LONDON WALL 361.

Morse code:- C

*Salisbury House.*  
*London Wall.*  
*London, E.C.*

May 15th 1911.

T. A. Edison, Esq.,  
Orange,  
New Jersey, U.S.A.

My dear Sir,

I have not had any correspondence with you regarding the battery for many months. When Insull was over here he spoke very encouragingly of the results he was obtaining in Chicago and sent me on a series of special reports which clearly indicated that you had made very substantial progress.

Some friends of mine, viz., Mr. Edward Manville, who is Chairman of the English Daimler Company, which is far and away the strongest and biggest motor company in Great Britain, and which is in a very strong position financially and otherwise, and Mr. Percy Martin, the Managing Director, feel strongly that there is a good future for your storage battery in this country, particularly in connection with haulage work, and in connection with a mixed system, viz., petrol electric vehicles. This class of vehicle they think will come into general use in the bus traffic.

T. A. Edison, Esq.

- 2 -

May 15th 1911.

I wrote you many months ago that the petrol bus was far from being a success. A new line of vehicles has, however, superseded the old ones and it is said on good authority that the new vehicles can be worked and maintained under 8d per mile run. It is claimed for the petrol electric vehicle (which is a petrol engine driving a dynamo clutch, which under certain conditions pumps into the storage battery and during starting takes current from the storage battery) that this outfit is materially lighter than the ordinary petrol vehicle and can give a much higher rate of acceleration.

If Messrs. Martin and Manville take hold of the battery for this country, there would be every chance of success, since they are both practical engineers and thoroughly understand the manufacturing and automobile business.

In connection with the Mergann and Sir Ernest Cassel I felt some reticence since it was not apparent what form of working they would be able to make that would ensure the proper manufacturing and sale of the battery. In the case of the Daimler Company, I would have no hesitation since they are already in the business and know perfectly well what they are doing. In a recent conversation, Mr. Manville said he thought Mr. Martin and he might visit America with a view to discussing

T. A. Edison, Esq.

- 3 -

May 15th 1911.

the situation generally with you and making some working arrangement.

Strangely enough, the man Stewart, who was one of Dick's satellites, represented to them that he was your accredited agent in this country. I had no particular difficulty in clearing up this matter, since I have known Mr. Manville and Mr. Martin for the best part of twenty years.

Certain friends of mine here in London are very big users of commercial vehicles and for a concern like the Daimler Company to put these vehicles on the market I think there would be every chance of satisfactory results. So confident am I that I am quite prepared to say that I would give as much time as is necessary to put the business on the best possible footing.

I believe, under our original arrangement, I was to be entitled to 10% of the profits. This arrangement, however, was made so long ago that you might wish to reconsider it. In any case, however, I think whatever deal you make should provide that I should receive some substantial retainer as your representative here in England, that is to say, if you elect to make a deal with the Daimler Company, either to manufacture or sell and use your accumulator.

Trusting this will find you well,

T. A. Edison, Esq.

- 4 -

May 15th 1911.

I remain,

Yours sincerely,

*W. Marshall*

From  
Ed. West

[May 29, 1911]

file

Herman Hayes  
Morgan Hayes & Co Paris -

Bergmann has made batch German Co  
went ahead against my advice making  
old cells used up his capital, cannot  
go ahead, wants to sell out, am doing  
fine business here employ thousands men  
far behind orders, new cells opening up  
new field involving great expansion  
Electricity a new epoch, suggest  
Stevens of Morgan firm come over  
investigate with view of you taking  
~~the~~ <sup>the</sup> advantage of this opening -

Opening

Edison

*Box - Kramer*

*23 Wall Street  
New York*

*WJ*

May 29, 1911.

MAY 31 1911

Dear Mr. Edison:-

Since you left here we have cabled Morgan, Harjes  
& Co., as follows:

"Thomas A. Edison requests us to cable you as follows-  
Promised to let you know when ready to negotiate French  
rights for my storage battery. Am ready now. Battery  
great success and opens new field in electrical expansion.  
Thousand men now employed in making batteries here and  
way behind in orders. If interested cable me. Bergman  
has made botch of it in Germany and wants to sell. Great  
opportunity to combine French and German rights."

This for your file.

Very truly yours,

*W. J. Kramer*

Mr. Thomas A. Edison,  
Lakeside Ave.,  
Orange, N. J.



125- France

J. P. MORGAN & CO.  
Wall Street  
New York.

DREXEL & CO.  
Philadelphia.

MORGAN, GRENFELL & CO.  
London.

MORGAN, HARJES & CO.  
Paris.

*Ans.*  
*6/5/1911*  
*Same* New York: June 1, 1911

Thomas A. Edison, Esq.,

JUN 2- 1911

Orange, N. J.

Dear Sir,

We are in receipt of a cable from Messrs. Morgan, Harjes & Company, Paris, asking us to advise them regarding the royalty of sixty cents (\$0.60), as to whether it is per battery or what.

We shall be pleased to have you give us the above information so that we may communicate same to Messrs. Morgan, Harjes & Company as requested.

Yours very truly,

*J. P. Morgan & Co.*  
*Gay*

Royalty sixty cents for each  
~~cell~~ cell - automobile size  
~~larger + smaller~~ larger + smaller,  
cells proportional to ~~the size~~

Analyst 11-785-<sup>5, 6, 7</sup>

Outgoing  
Send Catalogue

May we comment also on  
to <sup>to</sup> ~~our~~ <sup>your</sup> ~~found~~ <sup>interest</sup> without charge  
to <sup>our</sup> ~~interest~~ <sup>to</sup> ~~you~~ <sup>in</sup> ~~time~~ <sup>to</sup> ~~collect~~ <sup>catalogue</sup> ~~number~~ <sup>15</sup>

Collingwood  
Leeds,  
England,  
June 5<sup>th</sup> 1911.

May I trouble you for a  
little information about your nickel-iron  
secondary cell?

① Do you manufacture the cell in sizes  
to give a discharge of 4 watts continuously  
for 12 hours?

② What would be the weight of such  
a cell?

③ What would be the cost of the cell  
in lots of 1000?

④ What would be the probable life of  
the cell in constant use?

⑤ Would your company supply the  
writer with a sample cell of above

output and at what price?

I am engaged on a problem requiring an accumulator of excellent mechanical and electrical reliability, and I believe that your design would prove of great help in meeting the requirements.

The courtesy of an early reply would be much appreciated by

Yours faithfully,

Raymond. J. Mitchell.

Thomas A. Edison, Esq.,  
Orange,  
New Jersey,  
U.S.A.

B3-  
Submarine

File +  
Morgan Co.

JUN 26 1911

Mr. Edison

Mr. Porter of  
J. P. Morgan Phoned that  
it is reported from Paris  
that you have given up  
your European rights  
on Battery for traction  
on Rail - to Beach -  
and for Submarine  
purposes to another  
party. What rights  
have you accorded Monnet  
for the sale of your battery  
for other purposes -  
Mr. Porter would like  
to cable your reply -

J. P. Hagerty

J P Morgan & Co  
Say to Porter

Have not parted with any rights.  
my agent is selling submarine batteries  
to European governments. Beach ~~is~~  
has no rights, Moriet is simply  
~~an~~ a dealer in Automobile Lighting  
batteries I told him to sell in France  
and if he did satisfactory business  
I would not sell to other dealers

Edison

5150 Edison  
phones

POSTAL TELEGRAPH - COMMERCIAL CABLES

RECEIVED AT

*Ech. Friends*

**CABLEGRAM**

DELIVERY NO.

Tel. 200 Orange  
209 Main St., Orange, N. J.

The Postal Telegraph-Cable Company, Incorporated, transmits and delivers the cablegram subject to the terms and conditions printed on this cablegram.

REG. PATENT APPLD FOR.

9 NY N 39

London July 21-1911

Edison

Orange N.J.

JUL 21 1911

Responsible parties here request me learn whether Stewart authorized by you form syndicate exploit your english battery business I have no personal or financial interest in scheme cable reply hyde park hotel <sup>London</sup> am calling twenty ninth lusitania

Insull

*Also  
7/21/11  
2:45 PM*

~~Stewart~~ Stewart has no <sup>958</sup>connection directly or indirectly with me

~~Stewart~~ <sup>9</sup> ~~Stewart~~ would not have any dealings with ~~me~~

No inquiry respecting this message can be attended to without the production of this paper. Repetitions of doubtful words should be obtained through the Company's office, and not by DIRECT application to the sender.

*Edison*

*Ed - 2 memo*

B.W. GONIN & CO.,  
TELEGRAPHIC ADDRESS:  
"GMINATE", LONDON.  
TELEPHONE NO:  
2515 LONDON WALL.  
CODES:  
WESTERN UNION.  
A.B.C. 33 EDITION.

*Down*

57, MOORGATE STREET.

LONDON, July 21st. 1911.  
E.C.

Dear Mr. Edison,

While in Berlin recently, Mr. Bergmann <sup>11/18</sup> intimated me that you expect to visit this side next month.

Mr. Insull, who has just called, confirms this and adds that you may make a motor tour of Spain.

In case this is true, if my knowledge of the language and country can be of any service to you, I shall be glad to act as your Courier without pay.

An old friend of mine, Mr. George Lawton, closely identified with the Rothschilds and the German Banks who finance Bergmann, has some interesting proposals regarding an enormous development in the battery business, which he would like to put before you. He has, for years been an ardent admirer of your genius and achievements, and as he is a most forceful and interesting personality, one of the men who think, and act, it might interest you to meet him. If you will do so, kindly advise me as above.

Mr. Dickson asks me to say that you may command his services in any way desired while you are here.

Wishing you a pleasant voyage, I am,

Yours Truly,

Thomas A. Edison Esq.  
Orange, New Jersey, U.S.A.

*Wm. Insull*

B. W. GONIN & CO.

TELEGRAPHIC ADDRESS  
"OMINATE" LONDON.  
TELEPHONE NO.  
3315 LONDON WALL.  
CODES:  
WESTERN UNION.  
A.B.O. 5<sup>th</sup> EDITION.

57, MOORGATE STREET,

LONDON, August 4th. 1911.  
E.C.

Dear Mr. Edison,

I have been asked by Mr. Bergmann to submit to you some facts regarding an advance which can be made in the working of your new battery, and enclose herewith a brief statement, which it will be worth your while to peruse.

When in New York last Winter, Mr. Beach gave me a written undertaking, confirmed by a subsequent letter, in which he offered me batteries for a London omnibus service.

He subsequently gave me prices, conditions and guarantees on which he would furnish said batteries.

I understand, however, that he either acted without authority from you or is in some way prevented from carrying out his undertaking.

I should like to show you this correspondence, as the matter has caused me serious loss in reputation and pocket.

We have the money ready for this work, and can do it with the new motor at less cost than anyone else.

Bergmann wishes to discuss the question with you before you make any decision in order to avoid, if possible, the closing of his works.



LETTER TO \_\_\_\_\_ SHEET No. (2) DATE August 4th. 1911.

As I am perfectly satisfied that you wish <sup>in</sup> this matter, as <sup>in</sup> all others, to do what is fair, I shall be extremely obliged if you will give me an interview, so that you may know what has been done here and in New York.

I may say that we are quite ready to show you by practical demonstration that the Lundell motor will save you from 25% to 50% in cost of battery for any given service.

My associates here are the financial agents of the Rothschilds, and will provide any required sum for the omnibus or other business.

Yours truly,

*W.C. Stewart*

Thomas A. Edison Esq.

LONDON.

B.W. GONIN & CO.

TELEGRAMS ADDRESS:  
"DOMINATE" LONDON.  
TELEPHONE NO.  
2218 LONDON WALL.  
CODES:  
WESTERN UNION.  
A.B.C. CODE EDITION.

57, MOORGATE STREET,

LONDON, 16th. August 1911.  
E.C.

S. Bergmann, Esq.,  
Bergmann Electrical Works,  
25/28 Gudenarderst., Berlin, N.  
Germany.

*Yours*

Dear Sir,

I enclose a letter for Mr. Edison, which kindly read and hand to him, if you think best.

If he wants to give my friends the exclusive use of the battery for London omnibuses, we will give you the exclusive ~~use~~ and manufacture of the new Lundell motor for Germany and Austria on a very small royalty, thus enabling you to greatly reduce the price of your vehicles.

If you want to sell your works, and I hope this will not be necessary, I have a purchaser provided he is allowed to sell batteries in England.

We shall be prepared to send you a car, fitted with the Lundell motor, for test, if any arrangement regarding the omnibus or other business can be made with Mr. Edison.

I feel that my work in the direction of vehicle improvement deserves some recognition, and that it will prove of advantage to all of us.

If I am wanted in Berlin, please wire as above, and oblige.

Yours truly,

*W. N. Stewart*  
Esq.

[ATTACHMENT/ENCLOSURE]

① *Handwritten mark*  
B.W. GONIN & CO.  
TELEGRAPHIC ADDRESS  
"OMINATE" LONDON.  
TELEPHONE NO.  
3315 LONDON WALL.  
CODES  
WESTERN UNION.  
A.R.O. 57 EDITION.

57, MOORGATE STREET.

LONDON, 16th. August 1911.  
E.C.

Thomas A. Edison, Esq.,  
C/o S. Bergmann, Esq.,  
Berlin.

*Notes*

Dear Mr. Edison:-

When in New York last Winter Mr. Beach informed me that he had the sole right to use your battery for traction purposes, and gave me written permission to undertake the omnibus business in London, quoting prices and naming full guarantees.

Mr. Bergmann has copies of the correspondence and will show you the same.

I have since learned that you have cabled here stating that I had no authority to do this business.

On my return, I found capital for introducing 1,000 omnibuses at a cost of six million dollars, and have suggested to Mr. Bergmann that he get permission from you to furnish these batteries, thus enabling him to keep his works in paying operation. At the same time, I have obtained control of the new Lundell Motor, which has been fully tested and found to revolutionize the whole system of battery working. The use of this motor will save the sum of 275,000 per annum on the operation of 1,000 omnibuses, even if the nett gain in efficiency is only 10% in place of the 25 % already realized.

[ATTACHMENT/ENCLOSURE]

LETTER TO Thomas A. Edison Esq., SHEET No. 2. DATE 16th. August 1911.

In this situation, is it not possible for us to come to some arrangement regarding the omnibus or other business which will recoup myself and friends for our heavy outlay, and at the same time give you and Bergmann the use of this new motor and other improvements?

We are willing to fully demonstrate the advantages of this motor on a car, in New York or Berlin, subject to a previous arrangement as to business matters if we justify our claims.

To prove the economy, we use an Edison electrolytic meter, which is the only apparatus which can be used on a car to get accurate results, as it is not affected by vibration or magnetizing currents, and tests alike motor efficiency, regeneration and torque, as well as efficiency of driving system and tyres.

The comparison of two cars of equal speed and weight, over the same road, shows a saving of from 28% to 30% in favour of the new system, irrespective of a further gain of 28% secured by using less battery.

Surely this is worth while investigating.

Mr. Beach's error has caused me infinite trouble and loss. I went to him at Mr. Dyer's request, in all good faith, and secured the business.

As I have never yet known you to do an injustice to anyone, once you knew the facts, I ask you now to find some strictly business

[ATTACHMENT/ENCLOSURE]

LETTER TO THOMAS A. EDISON Esq., SHEET No. 5, DATE 16th August 1911.

way, in some department of the battery business, whereby I can get out square and satisfy my friends that I accepted Beach's offer in good faith. And such a business way will undoubtedly pay you better than it will me, as my people here can command business which cannot be had by anyone else.

If you want to see me in Berlin, I shall be glad to come there. If not, I shall be glad to provide a car for test if you will say what we may expect regarding the omnibus or other business if I show you something valuable.

I remain,

Yours truly,

*W. M. Stewart*  
WMS

---

B.W. GONIN & CO.

TELEGRAPHIC ADDRESS:  
"DOMINATE" LONDON.  
TELEPHONE 311  
2378 LONDON WALL.

CODES:  
WESTERN UNION,  
A.S.C. 315 EDITION.

57, MOORGATE STREET,

LONDON, August 28th. 1911.  
E.C.

*W. H. Stewart*

Dear Mr. Edison,

Some friends of mine in the East wish me to ask you if you are open to dispose of your cinephonograph rights in the Dutch East Indies and Straits Settlements. They can provide any required capital and are thoroughly familiar with the country.

It would be a great favour to me if you could grant this concession, and advise me with whom arrangements can be made.

Yours sincerely,

*W. H. Stewart*

Thomas A. Edison Esq.  
c/o S. Bergmann Esq.  
Berlin.

FRANCIS J. WALLIS

REGISTERED OFFICE ADDRESS  
"LYDDITE," SYDNEY  
CODE  
A.B.C. OF ENGLISH

TELEPHONE: CITY 100

*BATTERY STORAGE  
CRITICISM*

~~XXXXXXXXXX~~

YARALLA CHAMBERS  
100 PITT STREET

Sydney, Sept 27 11 . 191

The Managing Director,  
Peerless Rubber Selling Co Ltd.  
51-3 Elizabeth Street.  
Sydney .

Dear Sir .

Referring to the option which I abandoned and returned  
to you and <sup>another</sup> others, acting as a principal, in that deal, I regret  
to advise that my operations were hampered , and I found it quite  
impossible to obtain the capital for the purposes of selling  
Tram and other Cars, to be operated by the Edison Storage Battery.

I have approached a number of my friends etc and have been  
met with the assertion that the Edison Storage Battery is not  
a commercial success, and that it is totally unreliable for the  
purpose intended, and further I am given to understand that there  
is an independent Storage Battery or some similar invention  
shortly coming out, and to be put on the market.

On inquiry I find that such reports have doubtless emanated  
from a certain Firm, whom I need not name to you. I hear they have  
been experimenting at some length with this battery and they must  
be something radically wrong or this Firm would not be  
claim, scrapping the Edison Battery and on the eve of taking  
the agency for something far superior to compete with

Regretting that after the very best intention  
the cream of the Capital available for such a purpose  
I was compelled to throw up my option.

I am yours faithfully

Telephone 2454

**CREIGHTON & SANDERS**

LATE  
**HAMMON & CREIGHTON**

Customs, Forwarding, Shipping,  
Insurance and General Agents

**CIRCULAR QUAY.**

11 PITT STREET.

Circular Quay,

*Sydney, Sept. 28th, 1911. 191*

**INTERSTATE AND NEW ZEALAND**

AGENTS—

BROADBENT, BROWN & CO.  
WELLINGTON

R. M. GRIFFITHS & CO.  
WELLINGTON

SHIRLEY W. HILL & CO.  
AUCKLAND

H. C. CAMPBELL  
DUNEDIN

PATTERSON & FITZGERALD  
CHRISTCHURCH

GOODS STORED OR FORWARDED  
TO ANY PART OF THE WORLD.

FREE STORES—  
CIRCULAR QUAY.

Dear Mr. Moncke,

I have been very much interested in the  
E. B. B. and understood from you that it was perfect  
and in every way a success. I am very much surprised  
to learn within a day or so that a certain firm in  
Sydney, who from their experience in such matters  
should know what they are talking about, claim to  
have tested this Battery, and have found it to be  
an utter failure, and are now discarding its further  
use in favour of a recently perfected English or  
German Battery.

Being, as you know, interested as forwarding  
Agents in the best and most economical form of traction  
we will be pleased to have your advice as to whether  
there is any truth in these statements which are now  
being put about Sydney. Is the E. B. a failure, and  
is there anything now coming on the market which is  
better than it,

Awaiting your reply.

Yours faithfully,



# The States Import and Export Company, Ltd.

Indent, Commission & Manufacturers' Agents.

Exporters of Colonial Produce.

CABLE ADDRESS—BENHILL, SYDNEY.  
CODES USED—A.M.C. 4TH ED.  
WESTERN UNION, LITERAL & A. I.  
TELEPHONE NO. 4038.  
G.P.O. BOX NO. 1202.

COMMERCE BUILDINGS,

ASH STREET,

*Sydney*, 28th Sept. 1911 19

*Australia.*

T. J. Monks Esq.,  
Managing Director,  
Peerless Rubber Selling Co. of Australasia,  
51-53 Elizabeth Street,  
Sydney.

Dear Sir,

Are you aware that a Firm in Sydney has been representing themselves as being the exclusive Agents in Australia for The Wilson Storage Battery.

They imported a number of these Batteries and found them useless, and they can now be seen lying on the Scrap Heap at Marrickville, - as a consequence they have given up the Agency, - we shall be glad to hear from you on the subject.

Yours faithfully,

THE STATES IMPORT & EXPORT CO. LTD.

*H. S. Benic, Laurie*  
Managing Director.

*H. S. Benic, Laurie*

LONDON BANK OF AUSTRALIA LIMITED,  
WESTERN BRANCH, S Y D N E Y.

4th October 1911.

T. J. Mencks Esquire.

Dear Sir,

With reference to the Edison Storage Battery I desire to inform you that all the prominent Electrical Experts in this city unhesitatingly pronounce it as a failure. One leading Electrical Expert stated that it was low in power and efficiency, short lived and not a Commercial success and in his opinion never would be. The Tudor Company has I understand also reported unfavourably of it.

In view of these reports together with the prejudice against the Battery you are to be sympathised with in your efforts to place it on the Australian market.

Yours faithfully



# The States Import and Export Company, Ltd.

Incident, Commission & Manufacturers' Agents.

Exporters of Colonial Produce.

CABLE ADDRESS—BENWILA, SYDNEY.  
CODES USED—A.B.C. 4TH ED.  
MERCANTILE UNION, LONDON & A. S.  
TELEPHONE No. 4038.  
G.P.O. BOX No. 1202.

COMMERCE BUILDINGS,

ASH-STREET,---

*Sydney*, 4th October, 1911 19

Australia.

The Managing Director,  
The Peerless Rubber Selling Co. of Australasia Ltd.,  
51-53 Elizabeth Street,  
Sydney.

Dear Sir,

In further reply to yours of the 20th September calling attention to the formation of the Federal Storage Battery Car Co. of Australia to deal in Beach Cars, operated by the Edison Storage Battery, and in addition to our reply thereto under date of the 28th September we now beg to state:-

We have been as already advised very much interested in the Edison Storage Battery, but are compelled to return your Application Form blank, for the reason we have been credibly advised by a concern in this City who had been experimenting with the Edison Battery for over one year, that these batteries have proved an utter failure, and for that reason discarded their use.

We take this opportunity of expressing surprise, that a man of your standing in this City should attempt to induce us to invest money in a concern condemned by men who have tried it, or to find you promoting a Company which we are advised is palpably fraudulent.

Regretting to be compelled to write in this tenor but

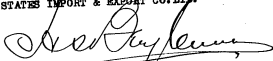
4th October, 1911.

Peerless Rubber Selling Co. of Australasia Ltd.....2

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feeling it due to ourselves to do so, we are dear Sirs,

Yours faithfully,

THE STATES IMPORT & EXPORT CO. LTD.



Managing Director.

*Battery - Liverpool*

STUART & DOUGLAS, LIMITED.

TELEGRAPHIC ADDRESS,  
"BOHNY," LIVERPOOL.  
TELEPHONE *NE* DANK 3572 & 3573.

REGD OFFICE,  
LIVERPOOL.

ALL COMMUNICATIONS MUST BE ADDRESSED  
TO THE COMPANY,  
AND CONTRACTS SIGNED BY A DIRECTOR.

*41, Castle Street.*

*Liverpool.*

October 11th, 1911.

*W. M. M.*

Thomas Alva Edison Esq.,  
NEW JERSEY.  
U. S. A.

OG 19 911

Dear Sir,

STUART WHARF & ESTATE, ELLESMERE PORT, CHESHIRE.

We understand that Works are about to be erected in this country for the manufacture of Long-Distance Motor Batteries, which you have recently perfected. We venture to submit to you herewith, plan and particulars of the above Estate and Wharf, as a most suitable site for the erection of works of this character.

The Wharf is about four miles from the entrance to the Manchester Ship Canal, and there are no bridges or locks to negotiate on the way up. Ships can approach and lay alongside at all states of the tide, and materials can be discharged directly into Works on the adjoining land, and afterwards despatched either by rail or canal to various points in the interior.

The transit facilities are exceptionally good, as in addition to the Manchester Ship Canal, the Shropshire Union Canal goes through the land, and a private railway siding connects directly with the L. & N. W. & G. W. systems.

From the above you will see that the cost of handling materials would be reduced to a minimum, and in addition there are agreements/with the in existence



Quality of  
and  
Mr. Edison  
Edison

Beethoven  
man who buys  
G

EXPLANATION OF ARTICLE IN EL LIBERAL  
OF SEVILLE ON  
EDISON STORAGE BATTERY.

I do not know who was Unamuno, who wrote in elegant style on the weightiness of words, but I am sure that although the word Acumulador (Storage battery, but in the original its connotation is large, thus permitting this circumlocutory prelude) was not enumerated among the most important, that there is no doubt that the impression made upon us, when we hear it pronounced is much greater, on account of the idea that is (now) associated with it etc. a play on words follows which could be explained but not translated.

We wish to speak of how the celebrated inventor, Edison, whose fame is indisputable has succeeded in "lightening" the meaning of the word Acumulador by lightening the weight of Acumuladores (storage batteries) and inventing a new type of storage battery, of light weight, without lead or any acid, complete in itself and entirely distinct in character from all storage batteries hitherto known.

The constituent elements of the Edison cell are iron and nickel. Picture to yourselves a small box of sheet steel of great thickness, with small undulations (in its surface) so that in spite of the reduced thickness its firmness may be very great. Then suppose it to be covered with a nickel plating, brought about by electrolysis, and you will have an idea of the exterior appearance of the Edison (the name is twice repeated everywhere it occurs in this article) storage battery.

But I do not wish to occupy your attention with what is merely superficial. I wish to give you an idea of what the Edison storage battery is, electrolytically considered. I want you to know what goes on within the battery and that you may be acquainted with the phenomena which take place when a battery of Edison storage cells is charged or discharged, for the purpose of drawing a coach, a truck, a tramway or an electric train, in the work of illuminating a plant of large or small size, in igniting the taper of a benzine motor or that of the brasier at which cigars are lighted, for operating the horn of an automobile or any other of the thousand and one functions which it is capable of fulfilling.

Yours  
Arturo  
Landa

I am going to explain these points to you by following step by step a very interesting work read by the American engineer Beach, at the 22nd meeting (annual) of the street railway association of the State of New York.

It is a matter of elementary knowledge that the metal, iron, tends to combine with oxygen, that is to say, to become oxidized; any piece of iron that is unprotected from the contact with the air becomes mildewed, or oxidized. The combination of iron with oxygen is called oxide of iron. Very well; this combination may be decomposed; the oxygen may be extracted from the oxidized iron, but for the attainment of that end energy must be expended. Conversely, when oxygen is combined with the iron, energy is released. This energy may be manifested in the form of heat or of electricity; calorific or electric energy.

We almost all of us pass through life without paying any attention to such matters. There are many who do not know that the oxidation of the blade of a knife produces heat or electricity; yet it is none the less a fact that knowledge of how to direct and control this oxidation and to take advantage of the energy produced is the fundamental feature of the Edison Storage Battery. In the first place, the Edison storage battery has, as a secondary cell, positive and negative plates that are submerged in a liquid that is called an electrolyte. The negative is formed by perforated receptacles of nickelled steel, which contain oxide of iron, finely pulverized, the said <sup>receptacles (probably technical word for "receiver")</sup> ~~plates~~ being grouped <sup>in form of</sup> a plane plate. Near this and in front thereof, there is another plate, called the positive plate, which is composed of various perforated steel tubes, nickelled, which contain oxide of nickel.

Nickel offers the peculiar feature that even after having formed a combination with oxygen, that is to say, after it has become oxidized, it tends to absorb more oxygen, or to become over oxidized. These two plates, one with the receivers full of oxide of iron and the other, with its tubes full of oxide of nickel are placed in a receptacle of nickelled steel, but at the same time, insulated the one from the other. They are submerged in water. This water contains in solution fluid potash, to increase its conductivity or its ability to transmit electricity.



The essential parts of the Edison Storage battery, then, are the oxide of iron plate, and the oxide of nickel plate, and water.

It is a storage battery of a kind that is somewhat analogous to the older storage batteries but which is in no way on a par with them. The combinations of iron and nickel with water are not destructive in their character nor are they destroyed by the movement hither and thither of the oxygen, and this is the peculiar feature of the Edison storage battery; it is stable. The stability of both the oxides and their resistance to chemical changes or to those of a chemical nature, which appeared to have a tendency to ruin them, is very noteworthy. No action that is known will disturb them or break them up. Said stability, naturally, implies duration and resistance, which were unknown qualities in previous storage batteries. The battery does not deteriorate with use. It only is subject to damage through neglect in using. We do not wish to dwell on its practical application for coaches, trams, trains and electrical tramways nor of the economy it affords, which is a final consideration in everything of an industrial nature, for this article, which is already somewhat lengthy, would then assume dimensions of an unjustifiable character and it would perhaps appear that I wished to take refuge in details which more properly belong to its scientific exploitation.

Moreover, we believe that all praise that may be given it, is weak when anything bearing Mr. Edison's signature is in question, especially when the inventor says to whomever may wish to hear it, that he has worked nine years in obtaining this, the goal that he had fixed upon. Nine years of the life of Edison devoted to an electrical storage battery, to which we may add the assertion of the inventor himself, that this invention is the one of all-others that he is most proud of.

(COPY)

November 6, 1911.

Mr. Paul H. Cromelin,  
Edison Manufacturing Co., Ltd.,  
Willesden Junction, London.

Dear Mr. Cromelin:

Mr. Edison has made an arrangement with Mr. J. F. Monnot, C/o Klaxon Co., Ltd., Rue Daru 31, Paris, under which he is to undertake to develop the field for the Edison battery in England and France. The arrangement is such that we can terminate it at any time, if there is reason to believe that Mr. Monnot is not making reasonable efforts to develop the business to the extent that the territory warrants, and Mr. Monnot fully understands that the continuance of the arrangement is dependent upon his making good.

Under the proposed plan we will arrange to keep a stock of from 300 to 400 cells of various types in England, in some place to be agreed upon (preferably at Willesden), where we can secure current and from which shipments can be made for the English market. Mr. Monnot will also select a place in Paris in which another stock of batteries will be kept, these latter being consigned to him, and as sales from this stock are made you will be advised thereof by Mr. Monnot, who will remit for the same. The precise stocks at Willesden and Paris will largely depend upon the size of the business Mr. Monnot may develop, but we wish to keep these stocks as low as possible consistent with safety.

We will send over from here one of our battery men, who will divide his time between London and Paris and who

Mr. Paul H. Cromelin- 2.

will fill them properly with electrolyte, "form" them and oversee the matter of their packing for delivery. When batteries are installed directly in trucks or for other purposes, the battery man can probably also oversee this work to a large extent to be sure that it is done properly.

By forming the batteries in England and France in this way we save one of our most valuable patents, covering the use of lithia in the electrolyte, which latter will be shipped from Orange.

When the stock at Willesden has been depleted to an agreed point, additional batteries to make up the deficiency will be shipped on cable order, and to facilitate this latter arrangement a simple code should be arranged between Mr. Stevens and yourself. I have requested Mr. Stevens to prepare such a code and to also advise Mr. Monnot thereof so that he can use the same code in ordering batteries to replenish the Paris stock. The battery man in his travels to Paris can keep you informed as to the condition of the Paris stock.

The batteries for Willesden will be billed to you at list, less 20%, f.o.b. London. They are to be billed by you to Mr. Monnot at list less 20% f.o.b. London. To this price should be added Mr. Edison's royalty in equivalents of American money as follows:

|      |        |          |
|------|--------|----------|
| B-2  | 10¢    | per cell |
| B-4  | 20¢    | "        |
| A-4  | 40¢    | "        |
| A-5  | 50¢    | "        |
| A-8  | 80¢    | "        |
| A-10 | \$1.00 | "        |
| A-12 | 1.20   | "        |

In other words, for batteries delivered in London

Mr. Paul H. Cromelin- 3.

for the British market Mr. Monnot pays the cost to you plus Mr. Edison's royalty, and freight from London.

In the case of batteries shipped to Paris, these will be, as stated, consigned to Mr. Monnot at list, less 20% f.o.b. Paris, plus Mr. Edison's royalty as above. On these batteries he will pay any cartage himself in Paris, including the French duty.

As batteries are sold by him from the Paris stock he will advise you of this fact and remit to you at list, less 20%, plus royalty as above.

We assume as our share of the expense in connection with the arrangement the salary and expenses of a buttry man, our proportion of rent at Willesden, transportation to London and Paris and cost of current used in forming and charging the cells. If there are any other expenses, such as any slight charge for book-keeping, stationery, postage, etc., these should be included and absorbed by the charge to Mr. Monnot under any arrangement that you and he may mutually agree upon. The only burden placed upon you is to see that the batteries are paid for by Mr. Monnot on terms not longer than 10 days.

Mr. Edison proposes that Mr. Monnot shall have a free hand to work up the market and see what he can do, so that of course you will refer any inquiries to him.

From the brief acquaintance Mr. Edison has had with Mr. Monnot he thinks very well of his ability and energy and he hopes with your cooperation that the arrangement may be made a success.

Mr. Paul H. Cromelin- 4.

I have given a copy of this letter to Mr. Monnot in order that there may be no misunderstanding as to the arrangement and he will call upon you shortly so that the details may be worked out between you.

With best wishes, believe me,

Yours very truly,

Frank L. Dyer,

Vice-President.

Telephone  
Franklin D. Roosevelt

H. W. BALK  
IMPORT - EXPORT

231 238 WEST STREET

NEW YORK, November 9th, 1911.

Cable Address  
"Hercules Express"  
A. B. C. 5th Edition  
Codes  
Private

*Very that I would not  
like to invade the area  
until results from the  
present laboratory work  
good - of them. Cuba alone  
wishes to have  
time*

Thomas A. Edison, Esq.  
Edison Laboratory  
Orange, New Jersey.

Dear Sir:

*I will return to you  
all the things you  
sent me for Cuba*

Regarding my to-day's conversation with  
you, I am very pleased to note that you are giving  
me the sole representation of the Edison Storage  
Battery and its adaptations for the whole of Cuba  
and the island of Ceylon.

As Ceylon is a part of British India, and  
most of the importations for India are going via  
Ceylon, I would be very pleased if you could also  
grant me the sole control for the above articles  
also for the whole of British India.

It is well understood that, providing I  
can show good results in the course of one year  
beginning January 1st 1912, no alterations regard-  
ing the sole control can be made.

I am now awaiting all the necessary liter-  
ature and informations of which you spoke to me this  
morning, and as soon as I get to the bottom of this  
proposition I will be pleased to give you a trial order.  
I intend to send an assortment of goods improved by  
your invention to my representatives. I will have

NOV 9-1911

(2.....Thomas A. Edison, Esq..... Nov. 9th'11)

the machines thoroughly demonstrated and there is no doubt that after the people see what they can accomplish we will see the result by getting important orders.

I want to go into this thoroughly and want to do it right. I am awaiting your good news as soon as possible, and I assure you of my very best interest in this whole matter.

Very respectfully yours,



H.W.B./ H.

Nov. 10th, 1911

Mr. H. W. Balk,  
235 West Street,  
New York City.

Dear Sir:-

Your favor of the 9th instant is received. In reply let me say that I would not care to enlarge the area of operations until the results from present territory were proved to be good. I think that Cuba alone would require the entire attention of one local concern.

The literature I spoke of is being prepared, and I shall send it to you as fast as we get it out.

Yours very truly,

P. S. You could sell there so long as the territory was open, but I do not want it reserved so I could not work it than other houses.

E



Telephone  
Franklin 261

H. BALK  
IMPORT - EXPORT  
5-338 WEST STREET  
NEW YORK

Cable Address:  
"Hercules Express"  
Codes: 10000  
10000

Thomas A. Edison, Esq.  
Edison  
Laboratory,  
Orange, New Jersey.

New York, November 11,  
Nineteen hundred and eleven.

Dear Sir:

Received your esteemed favor of yesterday's date, for which I thank you.

I understand from your letter that I can sell exclusively to Cuba and also to the island of Ceylon. I further note that you allow me to sell to other parts of British India without any restrictions on your part.

Now that we have this perfectly clear, I beg to announce to you that I have secured the services of a first class mechanic who is familiar with the Spanish language. I am making arrangements to send said Gentleman to Cuba well fitted out with a good stock of your inventions, so that same can be properly demonstrated.

Regarding Ceylon, I beg to say that I am in daily cable communication with that place as I have a first class account over there. My Ceylon man is the owner of several plantations, and is a very prominent man on the Island. I, of course, do not know

*Wired draft  
Say that just as soon as  
we can get the stuff  
will send it - when ready  
Come out stay at  
he is working until  
familiar with  
battery dynamo &  
Engines*

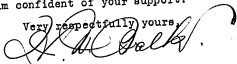
(page 2 .... Thomas A. Edison, Esq. Nov/11/11)

how far his knowledge goes regarding mechanics, but, he will no doubt find the right man and make this new department a success.

After receipt of the necessary literature and full informations, I will make up an order for which I will pay you cash. These goods I will send partly to Cuba, and partly to Ceylon. At the same time I will take the liberty to send my man for Cuba to your Laboratory and have the necessary points explained.

You see the interest I am taking in this matter and I am confident of your support.

Very respectfully yours,



H.W.B./H.

Nov. 14th, 1911

Mr. H. W. Balk,  
235 West St.,  
New York City.

Dear Sir:-

Your favor of the 11th inst. is received.

In order to avoid misunderstanding let me repeat the arrangement outlined at our interview, which was that I would set aside the Islands of Cuba and Ceylon and hold them to you as exclusive territory so long as you do sufficient business therein to satisfy me. In addition to this I will allow you to sell in other parts of British India as long as they have not been assigned by me to other parties as selling territory.

The preparation of the printed matter is progressing. I expect to have it ready shortly and will send it to you. When all is ready I will arrange with you to have your man come out to the Storage Battery Works, where he can stay until he is thoroughly familiar with the battery dynamo and engine.

Yours very truly,

B.S. Est - Hand

Wrote  
11/15/11

Herman Kayser Esq

My Dear Mr Kayser -

I have refrained from writing you about the battery until I had gone over the matter very carefully & decided what to do. While in Europe I have closely observed things & I find that it would be impossible to wage the investment of any money in manufacturing the battery, either in France or England until a certain preliminary introduction of the battery had been made through a small merchandising channel whereby a demonstration & creation of a demand was inexpensively brought about. There is now doubt that

there will be an enormous opening for the creation of new business all over Europe by this battery but it would be too expensive to do it in the usual way for instance as Bergmann has done. I have arranged to keep a <sup>constant</sup> supply of batteries in Paris & London & Mr Mounatt will go ahead & engineer demonstrably & introduce them gradually - an create a market large enough to warrant the erection of a factory = I have ask Mounatt that when he has demonstrated to everyones satisfaction that certain large projects are very desirable in a banking point of view that he shall lay the thing before you & your group to become

interested I am anxious  
that anyone who goes into  
any ~~of~~ projects, shall <sup>be based on anything intended by me</sup>  
not ~~be~~ meet with loss  
but always with profit



I will sign

*Battery Design*  
*"Edison's New York"*

*From the Laboratory*  
*of*  
*Thomas A. Edison,*

*Orange, N.J.* November 15th 1911.

—COPY—

Mr. J. F. Mennet,  
Paris, France.

Dear Sir:-

Confirming our various conversations  
in the matter of European representation of  
Edison Storage Battery Company:-

With the exception of Germany and  
Austria, and the sale of batteries for Gov-  
ernment use, you are to be the exclusive  
European representative of the Edison Storage  
Battery Company in the sale of the Edison  
Storage Battery, on basis as outlined in the  
letter addressed by Mr. F. L. Dyer, Vice-pres-  
ident of the Edison Storage Battery Company,  
in October 1911, to Mr. Cromelin, of London,  
and of which you have a copy.

All inquiries from said Countries  
coming to the Edison Storage Battery Company  
or Mr. Cromelin, are to be forwarded to you  
for attention.

This arrangement is to endure as  
long as your results are satisfactory to me.

Yours truly,

(Signed) *Thomas A. Edison*

12-21-1911  
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Thomas A. Edison

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PHC/W

DICTATED TO THE EDISON BUSINESS PHONOGRAPH.

TRADE MARK

Thomas A. Edison

# EDISON MANUFACTURING CO. LTD.

THE EDISON STORAGE BATTERY

EDISON WORKS

WILLESDEN JUNCTION,

FACTORY,  
BRIDGE, N.J., U.S.A.  
CITY OFFICES,  
25, CLEARENHILL ROAD, E.C.

Nov. 24th. 1911

Mo

London, N.W.

Dear Mr. Edison,

DEC 4 1911

I suppose Mr. Monnot is on the "Mauretania" en route here. I had a long talk with him in New York the night before I sailed and covered all the various points of interest. I understood from Mr. Dyer's letter that Mr. Monnot was to become the Exclusive Distributing Agent for Great Britain and France. I asked Mr. Dyer what about Holland and the rest of Europe except Germany. His reply was that we would take the matter up with you, so we asked you in reference to it. My understanding was that you said we were free to do any business we could except where an exclusive agent was operating. In talking to Mr. Monnot he stated that he did not so understand and that under his arrangement with you all inquiries we received were to be referred to him. I suggested that as I would not be able to see you again before sailing he should fix this matter up during his last week in America so that I would be clearly instructed on the point.

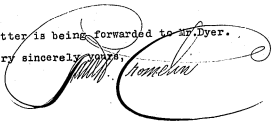
So far as we are concerned, I want to follow out your wishes entirely in the matter, but, as this is the only open point, I would be glad to have you give me specific instructions, if you have not already sent them forward by Mr. Monnot.

- 2 -

I am sending you under separate cover copy of today's "Standard", which contains a marked article about "The Coal Mines Bill", which was up in the House of Commons yesterday, particularly calling your attention to the reference to safety lamps and electric lamps in mining operations. I have heretofore brought to your attention the very great interest over here in this subject.

A copy of this letter is being forwarded to Mr. Dyer.

Very sincerely yours,

A large, ornate handwritten signature in cursive script, which appears to be "T. A. Edison". The signature is written in dark ink and is positioned to the right of the typed name.

Thomas A. Edison, Esq.,  
ORANGE, N.J..



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TRADE MARK  
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TRADE MARK  
*Thomas A. Edison*

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**THE EDISON STORAGE BATTERY**

**EDISON WORKS,**

**WILLESDEN JUNCTION.**

FACTORY,  
ORANGE, N.J., U.S.A.

CITY OFFICES,  
25, GLENNHULL ROAD, E.C.

IN REPLYING ADDRESS THE COMPANY NOT  
THE INDIVIDUAL AND MENTION THESE INITIALS.

DICTATED TO THE EDISON BUSINESS PHONOGRAPH.

*London, N.W.* Nov. 24th, 1911.

Dear Sir:-

Referring to your valued enquiry re Edison Storage Battery, we beg to advise you that Mr. John F. Monnot, 41, Great Portland Street, London, W., has been appointed Sole Distributing Agent in the United Kingdom for the Edison Storage Battery Company of Orange, New Jersey, U.S.A.

Mr. Monnot has been in the United States for several weeks perfecting the necessary details as to the handling of the business here, and is arranging to have sent over sample electric vehicles, for pleasure and business purposes, electric trucks etc., so as to be able to show and demonstrate to all interested the various applications of the Edison Storage Battery. He will have complete stocks of cells of the various sizes and be in position to make quotations and supply all wants.

When his stock of batteries and sample vehicles arrive, and he is ready to show the complete line, you will be duly advised, and we request you to then direct all further correspondence to him. Meanwhile, pending Mr. Monnot's arrival, we shall be pleased to give you any information relative to the performances of the Edison Battery in its various applications.

Very truly yours,  
EDISON MANUFACTURING COMPANY LTD.,

Telephone  
Franklin 3643

*Handwritten:* He is  
*Handwritten:* You remember we have  
*Handwritten:* arranged to write  
*Handwritten:* on lighting in Cuba & Ceylon  
*Handwritten:* amount of money  
*Handwritten:* New present  
*Handwritten:* last present  
*Handwritten:* should be raised

*Handwritten:* BALK  
 EXPORT  
 WEST STREET  
 NEW YORK

*Handwritten:* Cuba  
 "Hieronimo, New York"  
 Codes: A, B, C, D, E, F, G, H, I, J, K, L, M, N, O, P, Q, R, S, T, U, V, W, X, Y, Z  
 Prices

NEW YORK December 7<sup>th</sup> 1911.

DEC 7 1911

Thomas A. Edison, Esq.  
Orange, N. J.

Dear Sir:-

I beg to confirm my recent correspondence as well as conversations.

Your pamphlet which I received had my full interest, and I am just preparing to have same translated with a few alterations into the Spanish language. But, before I distribute same on the Island of Cuba I will send the proof to you for your kind approval. For the Island of Ceylon, I would ask you to kindly let me have at least a few dozen of these pamphlets.

As per your information that you would arrange with me to have me come out to your storage battery works as soon as the plant is finished, I am anxiously waiting for an appointment, as I would like to get this whole matter in shape before I leave for Europe for about two months time, beginning of January.

As informed before, the field of Cuba for your different inventions, mainly your storage battery, is immense. My bankers, Messrs. Miller, Schall & CO. who are very well connected on the Island of Cuba,

(Thos. Edison, Esq. (page two) Dec. 7'11.)

promised me their utmost support. They have written already regarding this matter to one of the wealthiest concerns in Havana, Messrs. Upman & Co., and these gentlemen are very anxious to see me. In order to fully demonstrate the storage battery plant, I want to get familiar with same in your works. I further want to get a complete outfit for me to take along, and to teach my Cuban representatives so that they can visit all the prominent people on the Island of Cuba, so that the great benefits of your storage battery outfit will become known.

There is, however, some difficulty which my bankers questioned me about; I have nothing to show that I have your sole representation for Cuba, and if I see people like Upman & Co., Havana, it is absolutely necessary that I have my credentials. I do not doubt in the least that you would bind yourself with me for one year beginning January first. Of course it is understood that this is simply a formal arrangement, as I personally rely upon your arrangements which you made as per letter of November the 14th. My bankers, however, saw right away that this business would develop to a very important one, and that even a moderate capital would not be sufficient to swing the thing in the proper way. It might begin with one or two orders, and then develop to such an extent that orders will come in ten at a time, and figuring on this, Messrs. Müller, Schall & Company will give me the necessary financial support, and, in order to do this, they would like to see the above mentioned contract.

Regarding the prices as per your pamphlet, I

(Thos. Edison, Esq. (3) Dec 7, '11.)

would prefer to get engines, generator, etc., from the manufacturer, as they will quote me their export prices which are much below your figures. Figuring a profit of 20% on your prices might be alright for your agents in the United States, however, working a place like Cuba, where the wealthy people are accustomed to being splendidly entertained before anyone is in a position to talk business to them is a different proposition. This is a peculiarity of the Spanish people, and this factor has always to be observed. This is why I prefer to get the export prices from the other factories, as I am of the opinion that the advantage I have there would partly cover such introduction expenses. I should be very much pleased to receive a favorable reply by an early mail, and, thanking you, I am,

Yours sincerely,



H. W. B. /H.

BATTERY - STORAGE  
- CRITICISM

Dec. 8th, 1911.

Confidential

H. W. Lewers, Esq.,  
London Bank of Australia, Limited,  
Sydney, Australia.

Dear Sir:-

I have recently come into possession of information so astounding to me as to be beyond my comprehension. I refer to the contents of several letters addressed to Mr. T. J. Monoke, who has left the same with me. Among these letters is one from yourself under date of October 4th, 1911.

According to the statements made in said letters, some so-called experts in your city, after a year's experiment, have pronounced the Edison Storage Battery an utter failure, and have relegated it to the scrap heap. Such an opinion as this is so utterly and absolutely at such great variance with actual facts that it is worthless, and I can only account for it on one of two grounds, namely, incompetency or dishonesty.

On the question of competency it is quite sufficient to say that in making the statement that the Edison Storage Battery is not a commercial success, that it is an utter failure and unreliable, the so-called electrical experts in your City have arrayed themselves in direct opposition to established facts and to the opinions of many of the highest scientific

N.W.L.

(2)

Dec. 8.11

and engineering experts of America and Europe. Hence, if the opinion of these so-called electrical experts in Sydney is to be considered in the light of their competency, they stand convicted of ignorance, and, therefore, their judgment in this case is worthless.

This brings me to the second point, namely, dishonesty. I do not for one moment pretend to make a positive allegation that the formulation of the adverse opinion above referred to was actuated by base motives, but let me state for your benefit the character of one kind of opposition with which I have to contend in this country. There are certain business interests that are inimical to the introduction and exploitation of my storage battery, and in our efforts to dispose of our product we are constantly called upon to combat the most flagrant and outrageous mendacity. If we were merely required to meet ordinary business competition I should not have the slightest complaint to make, but gross falsehood and underhand practices meet us at every turn. Bribery of employees of intending purchasers has been frequently resorted to by these unscrupulous interests, but this has been uncovered by us in several instances, and the offenders sent to jail. I will not trespass upon your patience by entering further into details of the campaign of misrepresentation, falsehood and corrupt practices that have confronted me in the commercial exploitation of my battery. Suffice it to say that it has been so general that I should not be surprised if it had extended across the ocean.

H.W.L.

(3)

Dec. 8/11

In-as-much as facts are more substantial, than opinions, allow me to indicate briefly the commercial status of my storage battery in this country. The most extensive employment has naturally been for commercial trucks and pleasure vehicles, and of these there are at present between 1500 and 2000 in daily use, operated by the Edison Storage Battery. These are all giving satisfactory results, and this branch of our business is increasing rapidly day by day, much of it coming in the shape of additional orders from satisfied customers.

My battery is also used very extensively in railroad train lighting and for signalling by many of the greatest railroads in the United States, such, for instance, as the New York Central R.R.; New York, New Haven & Hartford R.R.; Pennsylvania R.R.; Lehigh Valley R.R.; Baltimore & Ohio R.R.; Union Pacific R.R.; Great Northern R.R., and many others. This business is also increasing by leaps and bounds purely on merit. If you are at all acquainted with railroad conservatism you will fully realize what this means. A great many railroad platform baggage trucks are also equipped with my battery, and orders in this direction are becoming more frequent.

Ignition sets for gasoline automobiles, motor boats and stationary gas and gasoline engines, call for a large output of our smaller size cells. We are also supplying batteries for lighting of country houses by means of isolated plants. These are also giving most satisfactory results.

N.W.J.

(4)

Dec. 8/11

The Edison Storage Battery has also been adopted by the United States Government for many uses, and next year I expect to begin the equipment of some of our submarines with very large batteries especially designed for the purpose.

As to street cars propelled by my battery, I would refer you to the enclosed statement of what has been done by the Federal Storage Battery Car Co. in the way of selling these cars. This list explains itself, but allow me to call your special attention to the repeat orders which have been given after cars have had commercial trials. It will undoubtedly occur to you that the street car business is one which would naturally be of slower growth than the others above mentioned. It has been so in this case, but now that the commercial success of street cars operated by my battery has been firmly established, orders are coming in fast.

I am sending to you herewith copy of the catalogue of the Edison Storage Battery Company, the frontpiece of which shows the group of buildings in which my industries are carried on here. The buildings on the left are those in which the storage battery is made, the main building being about 400 feet long. Since the picture was made, however, I have been compelled to put up an additional building, and enclose a photograph showing the battery plant separately. Beside these buildings, I own a special Chemical Works about three miles from here, in which are manufactured the chemical ingredients used in the battery. Photograph is enclosed.

The plant of the Federal Storage Battery Car Co.



N.W.L.

(5)

Dec. 8/11

is located at the same place as the last named Works, and I will also enclose photograph thereof. There is plenty of room for enlargement, as I own a large tract of ground where these buildings now stand.

I could extend this letter by going into greater detail, but will not do so, as I believe you are a business man of sufficient acumen to appreciate the fact that the above are not the usual ear-marks of commercial inaptitude, failure or unreliability. It might possibly be said that the foregoing is an ex parte statement by the person principally interested, but let me say that you are at liberty to write to your New York correspondents and have them investigate. Should you desire to have them look into the matter at this end, I shall be glad to afford them every facility for examination of the status of the manufacture and exploitation of my storage battery. There is nothing to conceal on my part. On the contrary, I welcome all fair-minded and intelligent inquiry.

The reason I have taken the trouble to write you at such length is chiefly to acquaint you with the truth and to keep you from being led into the error of spending a lot of money in trying to install a system of street cars operated by batteries of an old, or possibly re-vamped, type, which have been repeatedly tried in the United States for the purpose and utterly failed. This statement can be fully verified. On the contrary, street cars operated by my battery have been conclusively proven to be successful, commercially and scientifically, and have opened the way to greater simplicity, reliability and

H.W.L.

(6)

Dec. 8th, 1911

economy in the operation of street cars in cities and suburban localities. The weight of rails may be less, the overhead trolley or underground slot may be dispensed with, no bonding of rails is required, and there is no tying up of an entire system by trouble in the power house.

In our endeavors to exploit street railway travel by means of cars operated by my battery, I am fully aware that we shall have to contend with the most determined opposition of interests already strongly entrenched, such, for instance, as the manufacturers of other types of battery, and the Companies who make a business of installing railroads with overhead or slot trolley systems. Naturally it is to the interest of these concerns to say nothing in favor of the Edison battery, but, on the contrary, to oppose it tooth and nail, for they see in the practical success it has so far attained and the economy of operation it shows that it is the system which is bound to prevail. All I ask is fair and intelligent consideration.

Allow me to add that I did not know Mr. Moncks personally before my interview with him a few days ago, and I have not seen him since. So far as I know, his dealings have been with the Federal Storage Battery Car Co.

Yours very truly,

(Signed) Thomas A. Edison  
TAM

TAB/BE

Dec. 12th, 1911

Mr. H. W. Belk,  
235 West St.,  
New York City.

Dear Sir:-

Your favor of the 7th instant, in regard to the house lighting proposition with my storage battery, is received. You ask for a contract giving you the exclusive agency for this class of business in the Islands of Cuba and Ceylon for one year. I cannot consent to give it. When we had our interview last month about this subject you asked me for a time contract, and I then told you I would not tie up any territory for any specific length of time, but would hold it as long as you might do sufficient business therein to satisfy me. This was repeated in my letter of November 14th last. I see no reason to change my decision now.

You say in your letter that you wish to come out to the storage battery plant to obtain full details and instructions, so that you can get the matter in shape before you leave for Europe, where you will be for about two months. I am quite willing that you should do this if you will give me notice a day or two ahead, but as you are going to be in Europe for two months, would it not be better to wait until

H.W.B.

(2)

Dec. 12/11

your return, as you cannot go to Cuba until then?

I have rented a house here and am furnishing it and equipping it with a complete plant for demonstration purposes. As this is essentially the business you desire to exploit in Cuba and Ceylon, would it not be well to wait for a few weeks and see it in operation?

Yours very truly,

TAR/ES

E M/2 60

Dec. 13th, 1911

Paul H. Cromelin, Esq.,  
Edison Manufacturing Co., Ltd.,  
Willesden Junction,  
London, N.W.,  
England.

Dear Mr. Cromelin:-

Your favor of the 23rd ult. to Mr. Edison, together with the bunch of motor cycle catalogues, came duly to hand. Mr. Edison wants me to thank you therefor. I have also received your favor of the 27th ult. in which you give me the discounts. All this data will be of much use to Mr. Edison.

Wishing you the Compliments of the Season, I remain,

Yours very truly,

WHM/ES

Telephone  
Franklin 3003

H. W. BALK  
IMPORT - EXPORT  
235-238 WEST STREET

Circle Address:  
"Hindustan Newspaper"  
A. H. C. 5th Edition  
Codes: 1  
District  
Please

NEW YORK, December 14th 1911.

Thomas A. Edison, Esq.

Orange, N. J.

Dear Sir:

I received your favor of the 12th this morning, and your full explanation had my best attention.

I note that you are not able to tie up any territory for a specific length of time, and I beg to assure you that you will not have any reason to complain about my sales; as, I will do all in my power to get important orders.

I am so much interested in this new venture, that I am anxious to see the house lighting plant in operation, and if your complete plant for demonstration purposes should be finished before the 6th of January, on which day I am leaving on the Steamer "America", I will be glad to have you make an appointment with me.

Trusting to receive your favorable news,

I am,

Yours very truly,



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01

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We thankfully acknowledge the vision and support of Rutgers University and the Thomas A. Edison Papers Board of Sponsors.

This edition was made possible by grant funds provided from the New Jersey Historical Commission, National Historical Publications and Records Commission, and The National Endowment for the Humanities. Major underwriting has been provided by the Barkley Fund, through the National Trust for the Humanities, and by The Charles Edison Foundation.

We are grateful for the generous support of the IEEE Foundation, the Hyde & Watson Foundation, the Martinson Family Foundation, and the GE Foundation. We acknowledge gifts from many other individuals, as well as an anonymous donor; the Association of Edison Illuminating Companies; and the Edison Electric Institute. For the assistance of all these organizations and individuals, as well as for the indispensable aid of archivists, librarians, scholars, and collectors, the editors are most grateful.

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**Thomas A. Edison Papers**  
at  
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endorsed by  
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18 June 1981

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The original documents in this edition are from the archives at the Edison National Historic Site at West Orange, New Jersey.

ISBN 978-0-88692-887-2

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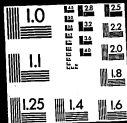
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